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The NATIONAL BANKING REVIEW

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A JOURNAL OF POLICY AND PRACTICE

THE ADMINISTRATOR OF NATIONAL BANKS
UNITED STATES TREASURY

Articles on

- Recent Monetary Policy
- Chain Banking
- Capital Ratios and Capital Adequacy
- Response to U.S. Capital Restrictions
- Wartime Rise of Currency in Circulation
- The Deferred Call Privilege
- Terms on Conventional Mortgage Loans
- Patinkin on Money, Interest, and Prices
- The Money Trust Investigation

- Legal and Regulatory Developments
- Selected Statistical Data
- Book Reviews

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The NATIONAL BANKING REVIEW

A JOURNAL OF POLICY AND PRACTICE

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JAMES J. SAXON
Comptroller of the Currency

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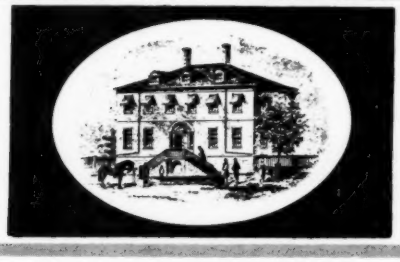

ON THE COVER — East side of the first Treasury Building, occupied in 1800, and burned by the British in 1814.

"To improve the present time, appears the most provident course . . ."

— *Albert Gallatin,*
Secretary of the Treasury
(1801-1814)

►GARY FROMM

Recent Monetary Policy: An Econometric View

Monetary policy manipulation is much like a sport. Managers make their decisions on the field and spectators feel free to second-guess strategy and pass judgment on the success of the outcome. And just as in sports, the manager may not always be right. Nor need the onlookers be incompetent to evaluate potential consequences or, *ex ante*, to devise what at least to them seem to be superior strategies. This is especially true when the manager has not used the full range of tools or information at his disposal. On the other hand, whether by design or fortuitous chance, *ex post* events may well prove the manager far more correct than his armchair critics.

Because of the spectator interest expressed in the monetary policy actions taken by the Federal Reserve Board in December 1965, it was decided to simulate these changes on the Brookings quarterly econometric model of the U. S. economy, in order to determine their potential impact on GNP, consumption, other components of the national income and product accounts, industry outputs, wage rates, prices, unemployment, and so forth. The model is still in preliminary form, however, and much remains to be done in the way of respecification of certain functions and testing of the complete equation system in response to exogenous shocks. The results should not be taken too literally; they are presented here primarily to illustrate the potentialities of the use of a large-scale econometric

Gary Fromm is a Senior Staff Member at The Brookings Institution. The author is indebted to William C. Brainard, Sam B. Chase, Jr., Lawrence R. Klein and Edwin Kuh for their helpful comments at various stages of the research. Only the author, however, is responsible for the defects remaining.

model in analyzing the effects of a significant policy action.

The Brookings model is the product of nearly five years of effort by an inter-university, inter-agency group of economists from all over the nation. In each of the sectors of the economy analyzed—consumption, residential construction, fixed business investment, inventory investment, government taxes and transfers, industrial production, employment and hours—the relationships between variables are stated in structural form. That is, they supposedly reflect economic behavioral characteristics of the affected groups or, in the case of government, legally specified parameters such as income and excise tax rates. The complete model comprises over 400 equations and is far too extensive to detail here.[1]

A 176-simultaneous-equation condensed version of the model was used for the simulations presented here. (A simulation is a solution of the system changing some set of conditions from those which otherwise would prevail, e.g., a shift in the discount rate.) In this model, the Federal Reserve banks' discount rate and the maximum allowable rate payable on time deposits are treated as exogenous policy parameters that may be specified from the outside. Then, given the structural coefficients of the equations and certain other exogenous variables (such as government expenditures, population, etc.), the system determines the values of the remaining (endogenous) variables.[2]

Aside from those endogenous variables already mentioned, the model includes the following financial elements: private demand deposit liabilities of commercial banks less interbank deposits, cash items in process of collection, and Federal Reserve float; private time deposit liabilities of commercial banks less interbank deposits; free reserves of Federal Reserve member banks; average yield paid on commercial bank time deposits; average yield on 3-month U. S. Treasury bills; average yield on U. S. securities maturing or callable in ten years or more. The last two interest rates, which are influenced by changes in the discount rate, enter into a variety of equations throughout the model. These rates, which serve as proxies for a whole spectrum of private security and borrowing rates, directly affect nonfarm residential construction, business investment in plant and equipment, inventory investment, and interest income. Indirectly, they affect all the other endogenous variables in the model.

The financial equations of the condensed system are as follows:[3]

$$(1)\quad RES_F = RES_{NB} - RES_R$$

$$(2)\quad RES_R = .84\,[RRR_{DD}]\,[DD + DD_{GF}] + .82\,[RRR_{DT}]\,[DT]$$

$$(3)\quad \frac{\triangle DD}{WLTH} = -.00281 - .108\,\frac{[DD]_{-1}}{WLTH} - .00491\,RM_{GBL} - .00236\,RM_{BDT} + .067\,\frac{Y_D}{WLTH} + .031\,\frac{[Y_D]_{-1}}{[WLTH]_{-1}} - .196\,\frac{\Sigma I_{BUS_j} + I_{CO}}{[WLTH]_{-1}}$$

[1] The complete system is described in J. S. Duesenberry, G. Fromm, L. R. Klein and E. Kuh (eds.), *The Brookings Quarterly Econometric Model of the United States*, Chicago: North-Holland–Rand McNally, 1965.

[2] This submodel and other simulations may be found in a volume now in preparation by the author and P. Taubman, to be entitled, *Policy Simulations with an Econometric Model.*

[3] In the complete model, the financial sector numbers over 30 equations.

$$(4)\quad \frac{\triangle DT}{WLTH} = -.00205 - .123\,\frac{[DT]_{-1}}{WLTH} + .00627\,RM_{BDT} - .00266\,RM_{GBS3} + .021\,\frac{[Y_D]_{-1}}{[WLTH]_{-1}}$$

$$(5)\quad \frac{\triangle RES_F}{[DD + DT]_{-1}} = -.00156 - .387\,\frac{[RES_F]_{-1}}{[DD + DT]_{-1}} - .00216\,RM_{GBS3} + .00235\,RM_{FRB} + .053\,\frac{\triangle[(DD + DD_{GF})\,(1 - .84\,RRR_{DD}) + DT(1 - .82\,RRR_{DT})]}{[DD + DT]_{-1}}$$

$$(6)\quad \triangle RM_{BDT} = -1.255 - .388\,[RM_{BDT}]_{-1} + .331\,RM_{BDTM} + .142\,RM_{GBL} + 1.02\,\frac{[ALNPS_B]_{-2}}{[DD + DT]_{-2}}$$

$$(7)\quad RM_{GBL} - RM_{GBS3} = 1.315 - 1.115\sum_{i=0}^{10}[w_{1_{-i}}]\,[\triangle RM_{GBL_{-i}}] - 1.413\sum_{i=0}^{10}[w_{2_{-i}}]\,[\triangle RM_{GBL_{-i}}] - .366\sum_{i=0}^{10}[w_{3_{-i}}]\,[\triangle RM_{GBL_{-i}}] - 5.1\,\triangle\frac{BF_1}{BF_{PUB}} - 5.2\,\triangle\frac{BF_{1\text{-}5}}{BF_{PUB}}$$

$$(8)\quad WLTH = .114\sum_{i=1}^{20}(.9)^{i-1}\,(GNP)_{-i}$$

The variables in order of appearance are:

RES_F = free reserves of Federal Reserve member banks, average during quarter, billions of dollars

RES_{NB} = unborrowed reserves of Federal Reserve member banks, average during quarter, billions of dollars

RES_R = required reserves of Federal Reserve member banks, average during quarter, billions of dollars

RRR_{DD} = weighted average of required reserve ratios against demand deposits, proportion

DD = private demand deposit liabilities of commercial banks less interbank deposits, cash items in process of collection, and Federal Reserve float, average during quarter, billions of dollars

DD_{GF} = Federal government demand deposits at commercial banks, average during quarter, billions of dollars

RRR_{DT} = average reserve ratio required against time periods deposits, proportion

WLTH = weighted average of recent values of GNP, billions of dollars

$\triangle$ = first difference operator (variable at t less variable at $t-1$)

RM_{GBL} = average yield during quarter on U. S. securities maturing or callable in ten years or more, percent

RM_{BDT} = yield on commercial bank time deposits, percent

Y_D = disposable personal income, billions of dollars

$\Sigma_j I_{BUS}$ = business gross investment in fixed plant and equipment (summed over j industries), billions of dollars

I_{CO} = value of new private nonfarm, nonresidential, nonbusiness construction put in place, billions of dollars

RM_{GBS3} = average market yield on 3-month U. S. Treasury bills, percent

RM_{FRB} = Federal Reserve Bank of New York discount rate, daily average during quarter, percent

RM_{BDTM} = legal maximum rate payable on commercial bank time deposits held six months or more, percent

$ALNPS_B$ = commercial bank holdings of loans and other private securities, billions of current dollars

BF_1 = U. S. marketable debt maturing within 1 year, average during quarter, billions of dollars

BF_{PUB} = marketable Federal debt of all maturities outside Federal Reserve and U. S. government agencies and trust funds, average during quarter, billions of dollars

BF_{1-5} = U. S. marketable debt of 1- to 5-year maturity, average during quarter, billions of dollars

w_n = fourth-degree polynomial weights

Two simulations were run. In the first, the discount rate was raised by 0.5 percentage points; in the second, the discount rate was raised by the same amount, and the maximum rate payable on time deposits was increased by 1.0 percentage points. All other monetary policy variables such as reserve requirement rates on demand and time deposits and unborrowed reserves were not altered. A control solution without any changes was also run. Due to data limitations, all three sets of computations were performed for 1961-62. The control solution is then a pseudo-realistic analog to 1961-62, and the simulations yield predicted events that might have taken place had the above monetary changes been instituted at the end of 1960.

Thus, differences between the values of the variable in the simulations and the control solution represent the impact of altering the monetary parameters.[4] The results are shown in the accompanying table. Thus, for example, at the end of eight quarters real GNP (measured in 1954-dollars) is $3.5 billion lower than would have occurred if the combined policy changes had not been instituted. This figure is equivalent to a drop in real GNP of about 0.7 percent. Since the economy has grown since 1961-62, the absolute drop at the expected 1967 levels of real GNP would be about 15 to 20 percent greater, or on the order of $4 billion. (For most of the other variables, the adjustment is negligible.)

That real GNP declines less for the combined policy shift than for the discount rate increase alone is due to the fact that in the combined policy case the resultant higher time deposit yields are reflected in a differential rise in interest income and bank deposits. The greater interest income and liquid assets buoy consumption and mitigate the drop in output. At the end of eight quarters, consumption is down $2.3 billion due to the discount rate increase and $0.9 billion due to the combined policy changes.

For investment, the picture is somewhat different. Here, the combined policies' higher interest rates generate a slightly greater drop in investment than the discount rate alone. Most of the difference is in the area of residential construction, where the higher interest rates of the combined policies raise costs and prices and consequently inhibit new con-

[4] Note that negative differences of the simulation less the control solution do not necessarily mean absolute declines in a variable, but only lesser rates of growth. For example, GNP increases over the period in the control solution and both simulations, but GNP in the latter less GNP in the control produces negative differences. The use of the words drop, decline, fall, etc., denote decreases in this relative sense.

struction. Business investment in plant and equipment under the alternative policies is affected by like amounts, the higher interest rates of the combined policies being offset by their larger output requirements, i.e., real GNP is greater. By the end of eight quarters, total real investment (excluding inventory change) is down by about $1.9 billion under either alternative. The rate of real inventory investment at that time is reduced by $0.88 billion for the discount rate policy and $0.92 billion for the combined policies.

Prices behave in a manner not anticipated by the Federal Reserve Board. Rather than falling, the rate of increase of prices is currently *rising*. For example, under the combined policies the GNP implicit price deflator relative to the control solution gradually rises until there is a maximum positive difference of 0.3 index points after six quarters, and only then begins to fall.[5] The explanation for this seemingly paradoxical behavior lies in the inertial factors of the employment process. These, in the short run, cause the speed of adjustment of employment to be less than the rate of change of output. Thus, when output falls (or begins to increase at a relatively slower rate) unit labor costs rise. This generates upward price pressures which are only partially offset by the reduction in output, i.e. demand. Obviously, the larger the drop in demand, the larger the offset. After a period of time, however, the adjustment is completed and the fall in demand will in fact produce lower prices. For the combined policies being analyzed here, this will probably take place in the third year after the policy shift.

Several caveats are in order in interpreting these price results. First, the small positive increases in prices should not be termed inflationary. Second, given the confidence bounds on the coefficients of the price and other equations, the small positive increases probably are not significantly different from zero and probably should be taken as equal to zero. In other words, the results might well be construed as indicating that prices are unaffected for a period of time and then begin to fall. Third, it is possible that the estimated relative weights of the labor cost and demand terms in the price equations are biased in favor of the cost variables. If so, then prices will begin to fall earlier than indicated in the table. Nevertheless, even if this is true, it would have little impact on the real variables, i.e., constant dollar GNP, consumption, etc.

The slow speed of adjustment of employment is reflected in the unemployment rate. As can be seen in the table, the unemployment rate grows very gradually and, under the combined policies, is 0.2 percentage points higher by the end of eight quarters than it would otherwise be. But, this is an understatement of the impact of the policy changes on the labor market because it takes no account of the shrinkage of the labor force due to reduced employment demands. That is, when the growth rate of employment opportunities and hiring decreases, fewer individuals are attracted into the labor force. Thus, the 0.2 percentage point increase in the unemployment rate is actually composed of a relative decline in employment of 324,000 persons and a relative decrease in the labor force of 186,000 persons, or a net increase in unemployment of 138,000 persons. For many purposes, the 324,000 figure is the more relevant.

Turning now to the monetary sector itself, it can be seen that the government bill rate rises initially by 0.31 percentage

[5] In 1965-66 terms, this is a slight overstatement because no account has been taken of the present lower levels of unemployment. Increases in unemployment at lower levels tend to hold down wage rates more than at higher levels. Adjustment for this phenomenon would not alter the nature of the price results to any appreciable degree.

TABLE

Effect of Monetary Policy Changes: Increase in Discount Rate of 0.5 Percent and Increase in Maximum Allowable Rate Payable on Time Deposits of 1.0 Percent*

Effects on National Income and Product Accounts	Billions of Dollars at Annual Rates, Seasonally Adjusted†							
	1961:1	1961:2	1961:3	1961:4	1962:1	1962:2	1962:3	1962:4
Gross National Product	+0.2	−0.2	−0.6	−1.1	−1.4	−2.8	−3.5	−3.8
	+0.2	−0.2	−0.5	−1.0	−1.2	−2.6	−3.1	−3.2
Real Gross National Product	+0.4	−0.4	−0.9	−1.6	−2.2	−4.0	−4.5	−4.9
	+0.4	−0.3	−0.8	−1.3	−1.7	−3.6	−3.5	−3.5
Total Real Consumption	+0.1	−0.2	−0.4	−0.7	−1.0	−1.7	−2.1	−2.3
	+0.1	−0.1	−0.2	−0.3	−0.4	−0.9	−0.9	−0.9
Automobiles	+0.0	+0.0	−0.1	−0.1	−0.2	−0.4	−0.4	−0.4
	+0.0	+0.0	−0.1	−0.1	−0.1	−0.3	−0.3	−0.3
Other Durables	+0.1	−0.1	−0.1	−0.2	−0.3	−0.5	−0.5	−0.5
	+0.1	+0.0	−0.1	−0.2	−0.2	−0.4	−0.4	−0.4
Total Real Investment (excluding	+0.0	−0.2	−0.4	−0.6	−0.9	−1.8	−1.8	−1.9
inventory investment)	+0.0	−0.2	−0.4	−0.7	−0.9	−1.9	−1.9	−1.9
Business Plant & Equipment	+0.0	−0.1	−0.1	−0.2	−0.2	−1.1	−1.1	−1.2
	+0.0	−0.1	−0.1	−0.2	−0.2	−1.1	−1.1	−1.2
Nonfarm Residential	+0.0	−0.1	−0.2	−0.4	−0.6	−0.7	−0.7	−0.6
Construction	+0.0	−0.1	−0.3	−0.5	−0.7	−0.8	−0.8	−0.6
Real Inventory Investment	+0.23	−0.08	−0.16	−0.33	−0.40	−0.66	−0.84	−0.88
	+0.26	−0.07	−0.18	−0.36	−0.42	−0.69	−0.86	−0.92
Real Disposable Income	+0.2	−0.2	−0.4	−0.8	−1.2	−2.2	−2.5	−2.7
	+0.2	−0.2	−0.4	−0.7	−0.9	−1.8	−1.9	−1.9
Disposable Income	+0.1	+0.0	−0.2	−0.3	−0.5	−1.0	−1.2	−1.3
	+0.1	+0.0	−0.2	−0.3	−0.4	−1.0	−1.1	−1.2
Effects on Prices and Unemployment								
GNP Implicit Price Deflator	+0.0	+0.1	+0.1	+0.2	+0.3	+0.5	+0.4	+0.4
(Index: 1954 = 100.0)	+0.0	+0.1	+0.1	+0.2	+0.2	+0.3	+0.2	+0.2
Consumer Price Index	−0.1	+0.1	+0.1	+0.2	+0.3	+0.5	+0.6	+0.5
(Index: 1954 = 100.0)	−0.1	+0.1	+0.1	+0.2	+0.2	+0.3	+0.4	+0.3
Wholesale Price Index for	+0.0	+0.1	+0.1	+0.1	+0.2	+0.5	+0.3	+0.3
Dur. Mfg. (1954 = 100.0)	+0.0	+0.1	+0.1	+0.1	+0.1	+0.4	+0.2	+0.2
Unemployment Rate (percent)	+0.0	+0.0	+0.0	+0.1	+0.1	+0.1	+0.3	+0.3
	+0.0	+0.0	+0.0	+0.1	+0.1	+0.1	+0.1	+0.2
Effects on the Financial Sector								
Total Bank Deposits	−0.68	−1.21	−1.36	−1.99	−2.37	−2.59	−2.79	−2.98
	−0.06	−0.86	+0.66	+1.28	+1.96	+2.69	+3.42	+4.26
Demand Deposits	−0.35	−0.61	−0.85	−1.04	−1.35	−1.51	−1.67	−1.85
	−0.67	−2.64	−2.57	−3.53	−4.48	−5.27	−6.02	−6.62
Time Deposits	−0.33	−0.60	−0.51	−0.95	−1.02	−1.08	−1.12	−1.13
	+0.61	+1.78	+3.23	+4.81	+6.42	+7.96	+9.42	+10.88
Government Bill Rate (percent)	+0.31	+0.31	+0.30	+0.28	+0.26	+0.27	+0.26	+0.26
	+0.35	+0.37	+0.36	+0.32	+0.29	+0.29	+0.27	+0.17
Government Bond Rate (percent)	+0.15	+0.12	+0.11	+0.12	+0.13	+0.15	+0.16	+0.17
	+0.17	+0.14	+0.13	+0.14	+0.15	+0.17	+0.17	+0.14
Bank Time Deposit Rate (percent)	+0.02	+0.03	+0.04	+0.04	+0.05	+0.06	+0.07	+0.08
	+0.36	+0.57	+0.70	+0.78	+0.82	+0.86	+0.87	+0.87
Free Reserves (billions of dollars)	+0.058	+0.100	+0.139	+0.177	+0.211	+0.233	+0.256	+0.270
	+0.072	+0.132	+0.190	+0.245	+0.298	+0.334	+0.367	+0.444

* The first line for each variable is the effect when the discount rate is raised by 0.5 percent; the second line shows the effect of simultaneously raising the discount rate by 0.5 percent and the maximum allowable rate on time deposits by 1.0 percent.
† Unless otherwise indicated. Real variables are in 1954-dollars.

points after a discount rate increase of 0.5 percentage points. After eight quarters this increase is eroded slightly. The bond rate, on the other hand, has an initial rise of 0.15 percentage points, which is reduced to 0.11 two quarters later, and then goes up to 0.17 percentage points by the end of the period. The effect of the combined policies is similar, but the increases are a bit larger.[6]

The impact on the *average* yield paid on time deposits is, of course, markedly different between the discount rate and combined policies. For the former, the average yield rises by 0.08 percentage points, while for the latter it rises by 0.87 percentage points. However, the latter may be an overstatement of the consequence of the Federal Reserve Board's recent increase of the maximum payable rate. Whereas in the simulation the maximum rate for *all* time deposits was raised by 1.0 percentage points, the Board raised the rate by that amount (from 4½ to 5½ percent) only for certificates of deposit. These currently comprise about 30 percent of total commercial bank time deposits. Thus, what happens to the overall average time deposit yield depends on five factors:

(1) The increase in rates paid by banks on CD's (while many banks peg the CD rate to a fixed increment over the bill rate, there is no necessity to do so —banks may at any time pay the legal maximum);

(2) The shift from passbook time deposits into CD's (for these deposits, on which the legal maximum rate is still 4 percent, the increase in the yield may be greater than 1.0 percentage points);

(3) The extent to which banks now paying less than 4.0 percent on passbook deposits raise their rates;

(4) The degree to which demand deposits are shifted into time deposits paying more than the average yield that existed prior to the policy shift;

(5) The amount of additional funds attracted into higher than the original average yield time deposits (presumably most of these funds—and those under item 4—would be placed in the CD market).

Making some assumptions about the rates and proportion of deposits involved under each of these factors, it appears that a rise in the average yield of 0.87 is not too unreasonable, especially since 0.08 points of the increase may be attributed to the higher discount rate. Observe that if the rise in the average yield is felt to be excessive, then greater losses in real GNP would be experienced than are now shown for the combined policies, i.e., the solution presented is a conservative estimate of the economy's lower growth rate.

The differential impact on deposits of the combined vs. the discount rate policies, which in part is responsible for the disparate rise in the average yield just noted, is shown also in the table. Because of the drop in income, raising the discount rate by 0.5 points has the effect of lowering both demand and time deposits by $1-$2 billion after eight quarters in 1961-62. Under the combined policies, however, only demand deposits decrease (by $6.6 billion) while time deposits, because of the higher yields paid, increase (by $10.9 billion). The shift from demand to time deposits is apparent and, together with additional funds attracted into time deposits, generates greater total deposits than would have resulted without any policy change.

Aside from affecting the relative position of different classes of banks, this shift also has implications for future monetary conditions. First, commercial banks that have large demand deposit liabilities and do not issue CD's may be squeezed and

[6] It might be noted that the Treasury's twist operations—raising short-term relative to long-term rates—have only a transitory effect on the structure of interest rates and do not significantly affect the above results.

forced to curtail loans. Second, since reserve requirements are much lower on time than demand deposits (4 vs. 12 to 16½ percent), a large shift from demand to time deposits substantially lowers required reserves and increases free reserves.[7] Under the discount rate policy alone, free reserves increased by $270 million by the end of the period, while with the combined policies they rose by $440 million.

Currently, of course, the numbers would be different. But the qualitative effects largely would be the same. It should be borne in mind that these were derived from simulations on 1961-62, that the model is still in preliminary form, that a condensed version has been used, and also, that the recent revisions of the national income and product accounts have not yet been incorporated in the estimation of equation parameters. Furthermore, the reaction of the economy to the monetary policy moves may be somewhat quicker and stronger than that revealed by the model because of two factors: (1) the large size of the discrete changes; and (2) the tendency for models to underestimate the amplitude of quick reversals. Nevertheless, certain implications can be drawn.

First, it should be emphasized that the Federal Reserve Board's recent policy moves are *restrictive*, whether taken alone, or in combination with the increase in the maximum allowable rate payable on time deposits. Real GNP does fall. However, an increase in free reserves has sometimes incorrectly been interpreted as a sign of greater monetary ease. If it is not recognized that higher levels of total deposits and free reserves are consistent, at least in the short run, with a higher discount rate, a shift to time deposits and a lower real GNP, additional restrictive policy measures might erroneously be undertaken.

Second, if loan demands rise sharply due to large, rapid exogenous increases in aggregate demand, such as the stimulus of unexpected international events, the ability of banks to fuel further credit expansion is in fact greater than if the maximum allowable rate payable on time deposits had not previously been raised.[8] Should such rapid exogenous increases transpire, *or be anticipated*, then greater restrictive action on bank reserves would be required.

[7] It should be recalled that unborrowed reserves, a policy variable, are left unchanged. Also, unborrowed reserves equal required reserves plus free reserves (excess reserves less borrowed reserves). Therefore, a drop in required reserves must be matched by an increase in excess reserves over borrowing. *Ceteris paribus*, borrowing of reserves, of course, decreases as its cost (the discount rate) rises.

[8] This assumes *ceteris paribus* conditions, i.e. that compensating adjustments have not been made in unborrowed reserves.

► JEROME C. DARNELL

Chain Banking

Although the bank structure has been widely discussed and studied in recent years, one of its aspects, chain banking, has been neglected. Not since the Federal Reserve Board study that presented data for 1945 has information been made available concerning the number and location of chain banks in the United States. At that time there were 115 bank chains consisting of 3 or more banks each, or 522 chain banks representing slightly less than 4 percent of the commercial banks then in existence. These banks held about 3 percent of all commercial bank deposits.[1]

In 1962, Wright Patman, Chairman of the House Committee on Banking and Currency, urged the Federal Reserve Board to obtain from member banks lists of the 20 largest stockholders of record, together with the number of shares held by each, and any loans made by member banks secured by 10 percent or more of the stock of any other bank. Stockholder lists of the 200 largest member banks, along with loans secured by 10 percent or more of the stock in other banks, were published in 1963.[2] In 1964, lists of the

Jerome C. Darnell is Assistant Professor of Business Administration, School of Business, University of Colorado. A substantial part of this article has been taken from the author's unpublished doctoral thesis, "Chain Banking as a Form of Banking Organization," Graduate School of Business, Indiana University, Bloomington, Indiana, 1965.

[1] *Federal Reserve Bulletin*, April 1947, p. 463.

[2] U. S. Congress, House Committee on Banking and Currency, *Chain Banking: Stockholder*

top 20 stockholders of all member banks were made available.[3] The primary purpose of this article is to present a summary analysis of the stockholder lists with the chain banking relationships that prevailed among member banks at mid-1962.[4]

I. Chain Banking Defined

There is no requirement for formal, consistent reporting of chain relationships to any Federal banking authority, and without knowledge of ownership ties it is difficult to ascertain the existence of bank chains or to determine which banks operate in particular chain systems at a given time.[5] There is also the question of a "proper" definition of chain banking. The Federal Reserve Board study applied a definition of "three or more independently incorporated banks" controlled by an individual or group of individuals.[6] Others, however, believe that ". . . concentration in control is indicated quite as much by the joining of two banks as three . . ."[7] or have referred to chain banking in terms of "two or more banks" controlled by the common ownership interests of an individual or group of individuals.[8] Representative Patman suggests that chain banking should encompass all common ownership ties (both corporate and individual) that do not fall under the definition of holding-company banking, or group banking.

A broad definition of chain banking was adopted for this study. A chain system was deemed to exist when two or more banks have one or more stockholders in common (excluding banks controlled by registered bank holding companies) provided that: (1) the stockholder(s) in common is among the 20 largest stockholders in each bank, (2) the stockholder(s) in common is a director or an officer in each bank, and (3) if the stockholder(s) in common is not a director or an officer, he owns 5 percent or more of the stock in the bank in which he is not a director or officer. This definition does not specify that two or more banks must be "controlled" by an individual or group of individuals. It would be virtually impossible to determine from stockholder lists alone when control is being exercised, in view of the hazards of establishing a definitive statement of "control" with general applicability, and of the impossibility of designating any particular percentage that would always insure control. Instead, the basic assumption underlying the definition is that banks with common owners satisfying the three stated conditions have the potential capability of coordinating operating policies and are therefore considered chain banks. Furthermore, by this definition, chain systems may result from the common ownership of corporate entities that are not registered bank holding com-

and Loan Links of 200 Largest Member Banks, 88th Cong., 1st Sess., Washington, D.C.: Government Printing Office, 1963.

[3] U. S. Congress, House Committee on Banking and Currency, Subcommittee on Domestic Finance, *Twenty Largest Stockholders of Record in Member Banks of the Federal Reserve System,* 88th Cong., 2d Sess., Washington, D.C.: Government Printing Office, 1964.

[4] The analysis cannot be extended to all commercial banks because stockholder lists are not available for the nonmember banks.

[5] Board of Governors of the Federal Reserve System, "Recent Developments in the Structure of Banking," report submitted to the Select Committee on Small Business, U. S. Senate, Washington, D.C.: Government Printing Office, 1962, p. 10.

[6] Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics,* Washington, D.C.: National Capital Press, 1943, p. 295.

[7] R. G. Thomas, "Concentration in Banking Control Through Interlocking Directorates as Typified by Chicago Banks," *Journal of Business,* January 1933, p. 3.

[8] Gaines T. Cartinhour, *Branch, Group and Chain Banking,* New York: The MacMillan Company, 1931, p. 58; John M. Chapman, *Concentration of Banking,* New York: Columbia University Press, 1934, p. 322; and Thomas, *op. cit.,* p. 2.

panies. Thus, all instances of common ownership that would not fall into the category of group banking are covered.[9]

Even this definition of chain banking is not entirely satisfactory. The same individuals do not always appear by the same designations in other banks, obscure family ties are not revealed by stockholder lists, and stock may be held in trust accounts or in the name of a bank nominee that does not reveal the identity of the beneficial owner.[10] Despite the use of a broad definition, chain banking is no doubt much more prevalent than is revealed by the data presented in the following pages.

II. *Descriptive Measures of Chain Banking*

A. Number of Chain Banks and Assets Held, by Federal Reserve Districts

Table 1 shows the number of chain banks by Federal Reserve District location, (see Data Appendix.) In 1962, chain banking systems encompassed 1,146 member banks, having about $45 billion in assets. About one-fifth of all member banks and member banks assets exhibited such a community of interest among stockholders. Three districts, the Seventh, Tenth, and Eleventh, account for nearly one-half of all chain banks. The remaining chain banks are divided about evenly among eight of the Districts, only the Twelfth District showing a small number. Chain banks represent from 14 to 16.6 percent of the member banks in seven Districts. Four Districts have 20 percent or more of their member banks operating in chains; the greatest proportion, almost 30 percent, is found in the Eleventh District. The Twelfth District has less than 10 percent of its member banks in chain organizations.

There were 526 member banks with one individual owning 5 percent or more of the stock in each of two or more banks. An additional 30 banks were discovered in which a group of the same individuals had combined holdings of at least 5 percent of the outstanding stock in each of two or more banks.[11] Banks joined by 5 percent holdings represent slightly more than 9 percent of all member banks. The largest number of banks linked by 5 percent ownership ties of individuals are found in the Tenth and Eleventh Districts. These two Districts include states that were almost exclusively unit banking states in 1962.[12] The Sixth and Ninth Districts, in addition to the Tenth and Eleventh Districts, had over 10 percent of their member banks joined by common ownership ties of 5 percent or more. The Seventh District had a larger number of banks, 70 compared with 47 and 46 for the Ninth and Sixth Districts, respectively, joined in this manner, but the proportion of member banks was only 7 percent.

In general, a similar pattern exists for 10, 15, 20, and 25 percent ownership positions. The Sixth, Ninth, Tenth, and Eleventh Districts have the largest num-

[9] Group banks are considered in this article to be only those banks controlled by a registered bank holding company. The Bank Holding Company Act of 1956 defined a bank holding company as a company that (1) directly or indirectly controls 25 percent or more of the voting stock of two or more banks, or (2) controls in any manner the election of the majority of the directors of two or more banks. Holding companies that fit this category are required to register with the Federal Reserve Board.

[10] *Twenty Largest Stockholders of Record in Member Banks of the Federal Reserve System*, p. 3.

[11] The holdings of corporate stockholders were not included in the columns showing various percentages linking banks together. The data refer strictly to "individuals."

[12] A small number of Louisiana and Arizona counties plus about one-half of the state of New Mexico are included in the Eleventh District, these being the only states in the two districts that allowed branch banking.

ber of banks linked by the various percentage holdings, as well as the largest proportions of member banks linked by these percentages. Each of these four Districts has 4.9 percent or more of its member banks joined by the holdings of individuals who own 25 percent or more of the stock in each of two or more banks.

Examination of the assets held by chain banks reveals a heavy concentration in four Districts (Table 2). Nearly 65 percent of the total assets of the chain banks are found in the Fourth, Seventh, Tenth, and Eleventh Districts; chain banks located in the Seventh District account for almost one-fourth of the assets. Chain banks account for over 30 percent of the total member bank assets in four Districts. Over 50 percent of member bank assets in the Eleventh District are held by chain banks, and over 40 percent in the Tenth District. Five Districts have chain banks controlling from 20 to 30 percent of member bank assets. Only three districts—the Second, Ninth, and Twelfth—have less than 10 percent of member bank assets held by chain banks.

The magnitude of assets controlled by chain banks that are linked by 5 percent ownership shares of individuals is slightly over $8 billion, or 3.5 percent of all member bank assets. Three Districts—Six, Ten, and Eleven—have from 10 to 21 percent of their member bank assets held by banks having common ownership ties of at least 5 percent.

At the other end of the scale, banks joined by individuals holding 25 percent or more of the stock in two or more banks represent about $1.7 billion in assets, roughly 0.7 percent of the member bank assets (Table 3). The chain banks in the Sixth, Tenth, and Eleventh Districts hold the largest amounts of assets in those instances of 25 percent ownership. Banks joined by 10, 15, and 20 percent ownership shares of individuals in each of two or more banks account for $5.2, $4.4, and $3.3 billion in assets, respectively. Interestingly enough, Districts One through Five and District Twelve, where statewide or limited branching is predominant,[13] have a small number of banks and small amounts of assets connected by the larger percentage holdings of individuals in two or more banks.

B. Number of Chain Banks and Assets Held, by Regions and States

The data used to construct Tables 1, 2, and 3 have been rearranged by geographic region and state and presented in Tables 4-7. Tables 4-7 also present member bank chains in relation to all insured commercial banks as well as member banks.

Only four states, all located in the Pacific region, have no member banks linked in a chain organization (Table 4). In fact, only one chain bank shows up in the entire region, that bank having a common ownership connection with a bank in the West North Central region. The East South Central region has the next smallest number of chain banks, with 37. The largest number are found in the West South Central and East North Central regions, these regions having 264 and 250 chain banks, respectively. There are 164 chain banks located in Texas, and Illinois has 111. Oklahoma and Pennsylvania rank third and fourth with 82 and 78, respectively.

Four regions—New England, South Atlantic, West South Central, and Mountain—have more than one out of every five member banks connected by common ownership ties. There are six states in which chain banks represent over 30 percent of the member banks in the state, Rhode Island being the leader with 60 percent. Twelve other states, located mainly in the Midwest, have over 20 percent of their member banks connected in chains.

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[13] *Federal Reserve Bulletin*, September 1963, p. 1195.

CHAIN BANKING

Chain banks account for 8.7 percent of all insured commercial banks in the country. The largest proportion is found in the Mountain states where one out of every six insured commercial banks has owners in common. The West North Central, East South Central, and Pacific regions have less than 5 percent of all their insured commercial banks connected in chains. Over 30 percent of the insured commercial banks in two states, Rhode Island and Idaho, are operating in chain systems; both states allow statewide branch banking. From 20 to 30 percent of the insured banks in New Hampshire, Oklahoma, and Colorado have common ownership links, and unit banking is prevalent in all three states. Fifteen states and the District of Columbia have between 10 and 20 percent of their insured banks in chain systems. In 2 of the 15 states, statewide branching is permitted, 7 permit limited branching, and 6 have unit banking. Thus, of the 20 states where chain banks represent over 10 percent of the insured commercial banks, unit banking prevails in 9, and either statewide or limited branching is found in the other 11.

Investigation of the number of banks in which one individual or a group of the same individuals owns 5 percent or more of the outstanding stock in two or more banks shows that Texas, Oklahoma and Illinois rank first, second, and third, having 98, 64, and 59 such banks, respectively. However, in terms of proportion of member banks in the state linked by 5 percent holdings of individuals, Idaho has 47 percent and Florida has 30 percent of its banks linked in this manner. Fourteen states—all having unit banking systems with the exception of Idaho, New Mexico, Arizona, and Nevada—have in excess of 10 percent of their member banks connected by individuals owning 5 percent or more of the stock in each of two or more banks. Only seven states—five in the Mountain region plus Florida and Oklahoma—have more than 10 percent of their insured commercial banks joined by at least 5 percent holdings of individuals in each of two or more banks.

Table 5 indicates the number of member banks that are joined by various ownership percentages ranging from 10 to 25 percent—344 banks are connected by at least 10 percent ownership positions; 15 percent ownership links 267 banks; 20 percent ownership joins 227 banks; and 175 are connected by at least 25 percent ownership positions in each of two or more banks. The East North Central, West North Central, West South Central, and Mountain regions consistently have the largest number of banks joined by the various percentage shares of ownership. These regions are composed of states that typically have unit banking; the average-sized banks may be small; and the states tend to be less industrialized.

Turning attention to the regional and state distributions of assets controlled by chain banks, we find that chain banks controlled about 19.3 percent of the member banks assets (Table 2), and about 16.3 percent of the assets of insured commercial banks (Table 6) in mid-1962. Slightly over 46 percent of the member bank resources in the West South Central region were held by chain banks, and all other regions, with the exception of the Pacific region, had from 10 to 30 percent of their member bank resources accounted for by chain banks. Six states—Rhode Island, Delaware, Maryland, Florida, Texas, and Colorado—had in excess of 50 percent of their member bank assets held by chain banks. The assets of chain banks represented from 30 to 50 percent of member bank assets in nine other states and the District of Columbia.

A comparison of chain bank assets with the assets of insured commercial banks shows that about one out of every $6 of insured bank assets is held by a member bank of the Federal Reserve System that has the potential ability to coordinate its

operating policies with at least one other member bank, and in many cases, several banks. In the West South Central states about $3 out of every $8 of the assets of insured commercial banks belong to chain banks. The East North Central, South Atlantic, and Mountain regions have slightly more than one out of every $5 of the assets of insured commercial banks held by chain systems.

Rhode Island has 90 percent of its insured commercial bank assets held by chain banks, the highest proportion among all states. Over 40 percent of the insured commercial bank assets in Delaware, Maryland, Florida, Texas, Idaho, and Colorado are represented by chain banks; Delaware, Maryland, and Idaho permit statewide branching, unit banking is the rule in the other three. From 20 to 40 percent of insured bank assets are held by chain banks in 12 other states and the District of Columbia—6 of the 12 have unit banking; the other 6 allow limited branch banking.

As previously noted, member banks that are joined by 5 percent holdings of one individual or a group of individuals in each of two or more banks represent about 3.5 percent of member bank assets. They also account for about 3 percent of all insured commercial bank assets (Table 6). The member banks with common ownership shares of 5 percent or more held by individuals account for about 12 and 14 percent of the member bank assets in the West North Central and West South Central regions, respectively. On an individual state basis, there are nine in which these chain banks hold more than 10 percent of the state's member bank assets—Florida is the leader with 30 percent, followed by Oklahoma with 26 percent. Seven of the states have unit banking; Indiana and New Mexico have limited branching.

Table 7 presents a further breakdown of the assets of member banks by ownership shares, i.e., banks linked by the ownership shares of individuals consisting of 10, 15, 20, and 25 percent of the outstanding stock. The regions in which chain banks hold the largest amounts of assets are the East North Central, West North Central, South Atlantic, and West South Central.

C. Holdings of Corporate Stockholders

Three hundred and thirteen member banks have stockholders in common that are corporate entities holding 5 percent or more of the stock in each of two or more banks.[14] Of these, 85 also have common ownership links formed by the holdings of individuals.

A summary of the holdings of corporate entities is given in Table 8 by type of corporate stockholder and Federal Reserve District location of the banks. (Table 8 includes only the member banks that are linked exclusively by corporate stockholders.) Because of the influence of mutual savings banks in the Eastern States, the First Federal Reserve District has the largest number of chain banks that have a connection through corporate holdings. Sixty-two chain banks were found in the First District (Table 1), and the holdings of mutual savings banks account for 30 of these. To the extent that state laws regulating mutual savings banks allow them to invest in corporate equities, commercial bank stocks have been one of the more attractive types of equity investments. At the end of 1962, commercial bank stocks accounted for one-third of the equity port-

[14] Eight banks are included in the total of 313 in which a corporate entity owned less than 5 percent of the stock in one of the banks. The basis for determining which member banks are chain banks depended on the stockholder's being a director, officer, or owner of 5 percent or more of the stock. In these eight cases, corporate entities owned less than 5 percent of the stock but nevertheless were designated as "directors or officers."

folios of mutual savings banks but represented less than 1 percent of the total assets of mutual savings banks.[15]

A comparison of Table 8 with Table 1 will show that the First District has by far the largest proportion of chain banks joined exclusively by corporate stockholders. The Fourth and Second Districts rank second and third in this respect.

Investigation by type of corporate stockholder indicates that the largest number of banks are linked by the holdings of bank nominees.[16] Ordinarily, nominees are found as stockholders in the larger banks rather than in the smaller ones. As a result, the Second and Seventh Districts, which include the New York and Chicago financial centers, are heavily represented by nominee holdings. In addition, a large number of banks in the Fourth District are linked in the same manner. One report has found that 18 percent of the top 20 stockholders of the 200 largest member banks are bank nominees.[17] The same report suggested that nominees are popular as a means of holding stock for the beneficial owners of (1) estates, (2) various types of individual, pension, and corporate trust accounts, and (3) investment management accounts. In addition to the 94 banks represented in Table 8 that are joined by nominee holdings, 19 other banks are linked by a combination of nominee and individual ownership shares.

Commercial banks frequently hold the stock of other commercial banks in some type of fiduciary capacity. There are 38 member banks in which another commercial bank appears as a stockholder linking two or more other member banks together by 5 percent ownership in each bank. In 27 other instances, commercial banks are 5 percent owners in two or more banks, but these banks are also connected by the holdings of individuals.

Although insurance companies find commercial bank stocks to be appealing investments in many cases, they generally do not invest heavily in any one bank. However, there are 11 member banks in which insurance companies own 5 percent of more of the stock in each of two or more banks. Twelve other member banks are joined by a combination of insurance company and individual holdings.

Eight instances were found in which the corporate entity linking member banks appears to be a bank holding company, according to the firm name. But in these cases the ownership shares of the holding company in each of the banks are not large enough to require registration with the Federal Reserve Board.

Twenty-two member banks were found in which a corporate stockholder owned 25 percent or more of the stock in each of two or more banks and yet was not a registered bank holding company. Thirteen of these banks were joined by the holdings of the Florida National Bank (plus the stockholdings of other individuals), a system of banks specifically exempted from the Bank Holding Company Act because the ownership arises via holdings of the Du Pont Testamentary Trust that was established in the 1930's. Of the other nine banks, five are joined by the holdings of another commercial

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[15] National Association of Mutual Savings Banks, *Mutual Savings Banks: Facts and Figures*, May 1963, p. 21.

[16] Bank nominees are corporate entities that hold the stock of a bank in some type of fiduciary capacity for the beneficial owners. In some cases the nominee has full power to buy, sell, and vote the stock. At the other extreme, nominee holdings may be purely nominal, and the beneficial owner exercises all prerogatives of ownership. Stocks are held in the name of nominees for various reasons, the most important being that this method avoids delays in the transferring of stock. The endorsement of the nominee is usually sufficient to put the stock in good delivery form. See *Chain Banking: Stockholder and Loan Links of 200 Largest Member Banks*, pp. 15-17.

[17] *Chain Banking: Stockholder and Loan Links of 200 Largest Member Banks*, p. 14.

bank, two are linked by the ownership shares of an insurance company, and two are connected by a nominee holding.

The assets controlled by the 228 member banks that are linked exclusively by corporate holdings of 5 percent or more in each of two or more banks are presented in Table 9. Included in the final column are the proportions of District member bank assets held by these chain banks. These chain banks were holding about $19.9 billion in assets compared with about $20.2 billion in assets held by the 434 banks controlled by registered bank holding companies in June, 1962.[18] Thus, the member banks of the Federal Reserve System that were linked exclusively by corporate entities controlled 7.2 percent of the assets of insured commercial banks (8.6 percent of the assets of member banks) compared with about 8 percent controlled by registered bank holding companies in 1962.

The magnitude of assets of banks joined by nominee holdings represents over one-half of the total assets, as shown in Table 9. Such a finding substantiates the point made earlier that nominee holdings are more likely in the larger banks. Table 9, in conjunction with Table 8, reveals that corporate holdings are much more prevalent among banks located in the Eastern half of the United States, and in turn, that these banks tend to be larger in terms of assets.

The Fourth and Seventh Districts have 27 and 22 percent, respectively, of their member bank assets held by banks that are joined by corporate stockholdings of 5 percent or more. Next in order are the Third District with 15 percent and the Fifth District with 12 percent.

D. Number and Size of Chain Systems

Table 10 presents the number of chain systems that were discovered, the size of these systems in terms of number of banks affiliated with a given system, and the Federal Reserve District where the systems were located.[19]

In some cases an arbitrary decision was required in assigning chain systems to a particular Federal Reserve District because the banks in several systems cover two or more Districts. In such cases, the following general rule was used. When three or more banks were connected, the system was assigned to the District where the majority of the banks were located. When there were only two affiliated banks located in two Districts, the system was assigned to the District containing the bank with the larger amount of assets. If three or more banks were connected with each bank located in a different District, the system was assigned to the District of the bank with the largest amount of assets.[20]

Table 10 shows that 431 chain systems were identified among the member banks

[18] U. S. Congress, House Committee on Banking and Currency, *Bank Holding Companies: Scope of Operations and Stock Ownership*, 88th Cong., 1st Sess., Washington: Government Printing Office, 1963, pp. 131-132. The deposits of group banks in June, 1962 were $19.5 billion, representing 8 percent of all insured commercial bank deposits and about the same proportion of all commercial bank deposits. Assuming group banks also held about 8 percent of the assets of insured commercial banks, then we can estimate that group banks would have accounted for about $20.2 billion in assets, or 8 percent of $274.3 billion.

[19] Location by Federal Reserve District is given as a matter of convenience, the reason being that the lists of member bank stockholders were published according to District location of the banks as the primary classification method. State location within a particular District was used as a secondary classification method. As a result, stockholder lists that came from states having banks located in two Federal Reserve Districts were separated according to District location of the banks. Therefore, the bank identification number assigned to each bank in the initial procedure of matching stockholder names identified the banks by Federal Reserve District instead of by state.

[20] No instances were found of an even number of banks in a system with exactly one-half of the banks located in different Districts.

of the Federal Reserve System.[21] Nearly one-half of these systems are evenly distributed among the Seventh, Tenth, and Eleventh Districts. The number of chains range from 22 to 31 in the remaining Districts, with the exception of the Twelfth District, where there are only five. Around 95 percent of all chain systems have five or fewer affiliated banks; systems having five or fewer banks comprise 85 percent of all chain banks. Nearly 70 percent of all chain systems are made up of only two banks. Of the 67 systems composed of 4 or more banks each, 35 of them are located in the Seventh, Tenth, and Eleventh Districts. Furthermore, one-half of the 74 systems consisting of 3 banks each are found in those 3 Districts. Thus, both in terms of number of banks involved and number of systems, the Seventh, Tenth, and Eleventh Districts comprise the most important regional areas of chain banking.

E. Percentage of Stock Ownership Linking Banks

A distribution of chain banks by Federal Reserve District and by percentage of stock held by the same owner, or owners, of two or more banks is given in Table 11. Numerous cases were discovered in which a group of the same stockholders had common ownership in each of two or more banks. When multiple ownership ties of this nature were found, the percentages of ownership were aggregated to provide the percentage ownership for the group.

Five hundred and twenty-nine chain banks, representing 46 percent of all chain banks that are Federal Reserve System members, are connected by ownership interests of less than 10 percent with the other banks in their respective chain systems. Banks having common ownership ties of 25 percent or more account for about 28 percent of the total. About 14 percent of all chain banks are linked with the constituent banks in their respective chain systems by ownership interests of 50 percent or more, the majority of these banks being located in Districts Six, Nine, Ten, and Eleven.

F. Magnitude of Assets

A distribution of chain banks classified by asset size is provided in Table 12. The largest number of chain banks fall in the $2 to $5 million category. Only about 8 percent of the chain banks have less than $2 million in assets; at the other extreme, 11 percent have over $50 million in assets. The three categories covering asset sizes between $2 million and $25 million account for nearly 75 percent of the chain banks.

Viewed in terms of the asset size of banks, the population of chain banks is similar to the population of all member banks. Chain banks with assets of $500 thousand up to $10 million represent 59.1 percent of the total; member banks falling into these four size intervals comprise 63.9 percent of all member banks. Chain banks with less than $100 million in assets account for 92.7 percent of the population. Member banks with less than $100 million in assets represent 94.9 percent of the population of member banks.

In comparing the distribution of chain banks with all member banks, it is instructive to observe that the proportions of chain banks in the smaller asset ranges, i.e., below $10 million, are not as great as the proportions of member banks. However, beyond the $10 million asset size, the proportions of chain banks are greater in each category than the corresponding proportions for member banks. Two conclusions can be drawn: First, the typical chain bank tends to be slightly larger in

[21] Table 10 shows 1,169 banks as opposed to 1,146 in Tables 1 and 4. In 23 cases it was impossible to determine in which of two chain systems the particular chain bank belonged; therefore, in these 23 instances the banks in question were included in each of two systems.

terms of assets than the typical member bank; second, chain banking should not be considered an exclusively small-bank phenomenon. Although it is difficult to define "small" and "large" banks, nearly 20 percent of all chain banks have assets in excess of $25 million.

G. Population of Location

A distribution of chain banks according to the population of their location is presented in Table 13. Almost 75 percent of all chain banks are located in the first five categories representing population centers of 25,000 or less, each of the five having about the same proportion.

The extent to which chain banks can be assumed to offer the only banking alternative in various population centers can be inferred from a recent study.[22] In June, 1962, population centers of less than 1,000 were found to have only one bank in almost 99 percent of the cases. In population centers of 1,000 to 5,000, the proportion having only one bank varied from about 82 percent in states allowing statewide branching to 75 percent in states with unit banking. In cities with populations between 5,000 and 10,000, the probability of having only two or fewer banks was nearly 90 percent in all states, regardless of branching provisions. The population of a city must be about 25,000 before the probability of having three or more banking institutions would be as high as 60 percent regardless of state branching provisions. On the basis of this study, one can infer that about three out of four chain banks face local competition from only one other banking institution. That is, 75 percent of the chain banks are located in population centers so small that the probability of facing competition from more than one other local bank is considerably less than 50 percent in most cases.[23] Perhaps even more significant is the fact that two-fifths of the chain banks are located in areas where the proportion of population centers having more than one banking alternative is small—usually less than 25 percent. By contrast, about 20 percent of the chain banks are located in standard metropolitan statistical areas with populations greater than 50,000—areas which usually have four or more banking alternatives.

H. Chain Systems Located in One County

Table 14 provides a summary of the spatial characteristics of bank chains and the relative importance of individual chains within their local market areas. Over one-half of the chain systems, or 242 of 431, are composed of banks located in the same county. These 242 systems account for 537 of the 1,146 chain banks.

One might expect chain systems with all members located in the same county to be more popular in states that prohibit branching. To a certain extent this expectation is borne out; Illinois and Texas have unit banking and rank first and second in number of chain systems, with 34 and 27, respectively. But contrary to this pattern, Pennsylvania allows branching within the home-office county and contiguous counties and ranks third with 23 systems. Florida, Michigan, New York, Oklahoma, and Virginia are the only other states with more than ten systems, and only two of these states, Florida and Oklahoma, have unit banking.

In 81 instances, chain systems were found to hold no more than 20 percent of county deposits. In 69 cases, the pro-

[22] See, *Federal Reserve Bulletin*, September 1963, p. 1197.

[23] The only exception to this conclusion occurs in centers with populations between 10,000 and 25,000 that are located where statewide branching is permitted. In such centers, 56.3 percent have three or more banks.

portion was 21 to 40 percent; in 55 cases, 41 to 60 percent; and in 21 cases, 61 to 80 percent. Finally, 16 systems account for 81 to 100 percent of county deposits, several of them individually accounting for all of the deposits in the county.

Briefly summarized, about two out of five chain systems with all of the affiliated members located in the same county hold over 40 percent of the total bank deposits of the county. In some counties, the concentration of deposits in bank chains is very high, and in others the degree of concentration achieved by the largest bank in the area may be several times greater than that of a bank chain.

I. Chain Banking Among Nonmember Banks

The discussion up to this point has been concerned only with chain banking among member banks of the Federal Reserve System. One would naturally be inclined to ask the question: To what extent is chain banking pervasive among nonmember banks? In an attempt to provide an estimate of the extent of nonmember chain banking, data published by the Federal Reserve Board between 1939 and 1945 has been utilized. A basic assumption made was that the ratio of member banks operating in chain systems to all chain banks has remained fairly stable since the last data were collected in 1945.

Table 15 furnishes a summary of data on number and deposits of all chain banks from 1939 to 1945. During this period, member banks accounted for a fairly constant share of all chain banks, ranging from 46.7 percent in 1939 to a high of 52.0 percent in 1943. Assuming that member banks still account for about one-half of all chain banks, we can estimate that around 1,150 nonmember banks were operating in chain systems in mid-1962, so that about 2,300 banks were members of chain organizations. This estimated total of banks operating in chain systems in 1962 would represent 17.5 percent of all insured commercial banks.

The ratio of deposits of member banks engaged in chain activities to deposits of all chain banks did not remain as stable between 1939 and 1945 as the ratio of number of member banks operating in chain systems to the total number of chain banks. Member banks held 77.5 percent of all chain deposits in 1939, and reached a high of 88.1 percent in 1943. By 1945, the ratio had declined to 84.6 percent. Since member banks have controlled about 85 percent of all commercial bank assets for several years, member banks operating in chains were assumed to account for 85 percent of all chain bank assets. On this basis, the estimated assets of nonmember banks operating in chains would be $7.9 billion. The estimated total assets of all chain banks would be almost $53 billion, representing 19.2 percent of the assets of all insured commercial banks in 1962.

III. Summary and Conclusions

The publication of the stockholder lists of member banks has furnished an excellent opportunity to examine the common ownership ties among member banks. The findings presented here reveal that the practice persists on a wide scale. We found that 19 percent of all member banks are chain banks and that these banks control 19.3 percent of the member bank assets. Chain banks that are members of the Federal Reserve System represent nearly 9 percent of all insured commercial banks, and they control about 16 percent of the assets of insured commercial banks.

The number of member banks joined by at least 5 percent ownership positions of the same individual or group of individuals in each of two or more banks account for about 9 percent of all member banks and hold slightly over 3 percent of all member bank assets. Examina-

tion of banks joined by larger ownership percentages of the same individual or group of individuals shows that less than 3 percent of the member banks are linked by ownership positions as large as 25 percent in each of two or more banks; these banks hold $1.7 billion in assets.

Around 4 percent of the member banks are chain banks in which the only common ownership tie is that of a corporate entity such as a mutual savings bank, another commercial bank, an insurance company, or a bank nominee—owning 5 percent or more of the stock in each of two or more banks. The banks linked together exclusively by coporate entities hold $20 billion in assets, or 8.6 percent of member bank assets.

The typical bank chain is small in terms of number of banks affiliated in each system. A large majority of the systems have only two or three banks. Ordinarily, the larger chain systems are located in states that have unit banking systems. Nearly one-half of all chain systems identified are linked by ownership shares of less than 10 percent.

Almost 20 percent of the chain banks that are members of the Federal Reserve System have in excess of $25 million in assets. It seems reasonable to conclude that the average chain bank tends to be slightly larger than the average member bank, since about 40 percent of the chain banks have more than $10 million in assets as opposed to around 35 percent in the case of all member banks.

On the basis of a study concerning the number of banking institutions per population center, one can conclude that about three out of four chain banks are located in areas where the probability of facing competition from more than one other local bank is ordinarily less than one-half. About two out of five chain banks are located in areas where the likelihood of having more than one bank is small.

The concentration of bank deposits that arises from chain banking is indicated by an analysis of the county location of banks affiliated in given chain systems. Over one-half of the chain systems comprised of member banks of the Federal Reserve System were found to have all affiliated banks domiciled within the boundaries of one county. Systems consisting of as many as five banks were found in which all of the banks are located in the same county. About two out of five chain systems having all the affiliated banks in the chain located in the same county held over 40 percent of the total bank deposits of the county.

Assuming the ratio of member chain banks to all chain banks (as revealed by Federal Reserve Board studies of chain banking between 1939 and 1945) has remained stable, one can estimate that around 17 percent of all insured commercial banks have shareholders in common meeting the criteria of chain banking adopted for this study. These banks would hold about 19 percent of the assets of insured commercial banks.

One of the more obvious conclusions to be drawn from the investigation of common ownership ties presented here is that chain banking is much more widespread than the current lists of member-bank stockholders reveal. For instance, it is practically impossible to identify family holdings, as contrasted with individual holdings, simply from stockholder names and addresses, especially in cases of different family names. And, of course, we have no access to nonmember-bank stockholder lists. Based on the fact that nonmember banks are usually smaller, one would expect chain banking to be equally prevalent, if not more so, among banks not having membership in the Federal Reserve System.

It would be hazardous to assert that chain banking relationships have developed as an alternative to branch banking. Certainly most of the states that allow some form of branching also have chain banks. Yet, there seems to be a discernible pattern in the first six tables

of our data which shows that chain banking does exist on a larger scale in the states and regions that have unit banking. Thus, states having prohibitions against branching may only invite some other form of multiple-office banking to emerge.

One might question the policy that requires only corporate entities controlling 25 percent or more of the stock in each of two or more banks to submit to Federal supervision. Many instances can be found of a single individual, or a group of the same individuals, having a similar ownership position of 25 percent or more in each of two or more banks. Yet, in these cases, Federal supervision is not required. The proper criterion for supervision should be the potential for harmful effects to the banking public from common control, instead of the source of that control.

Data Appendix

TABLE 1

Chain Banking, By Federal Reserve District
June 30, 1962

Federal Reserve District	Number of Chain Banks	Percentage of Member Banks	Number of Banks Linked by Individuals Owning—*												
			5% or More			10% or More		15% or More		20% or More		25% or More			
			One Ind.	Group of Inds.	% of Member Banks	One Ind.	Group of Inds.	One Ind.	Group of Inds.	One Ind.	Group of Inds.	One Ind.	Group of Inds.	% of Member Banks
1	62	24.4	13	0	5.1	9	2	4	2	4	2	4	0	1.6
2	74	16.4	18	0	4.0	10	0	10	0	4	4	4	2	1.3
3	69	15.1	20	2	4.8	0	0	0	0	0	0	0	0	0.0
4	74	14.0	18	0	3.4	7	4	3	2	3	0	1	0	0.2
5	69	16.4	27	0	6.4	7	0	2	0	0	0	0	0	0.0
6	86	20.0	47	3	11.6	29	9	17	11	17	9	13	8	4.9
7	167	16.6	70	0	7.0	29	14	18	10	14	6	12	6	1.8
8	71	15.0	25	6	6.5	13	2	11	2	4	6	2	4	1.3
9	73	15.5	46	2	10.2	29	3	27	3	23	5	19	7	5.5
10	201	26.3	126	6	17.3	84	21	60	34	40	40	27	30	7.5
11	185	29.3	105	11	18.4	57	9	40	9	34	10	24	10	5.4
12	15	9.3	11	0	6.8	4	2	2	0	0	2	0	2	1.2
Total	1,146	19.0	526	30	9.2	278	66	194	73	143	84	106	69	2.9

* Number of member banks in which one individual or a group of the same individuals own at least 5, 10, 15, 20, and 25 percent or more of the outstanding stock in each of two or more banks.

Sources: U. S. Congress, House Committee on Banking and Currency, Subcommittee on Domestic Finance, **Twenty Largest Stockholders of Record in Member Banks of the Federal Reserve System,** hereafter referred to as **Twenty Largest Stockholders,** 88th Cong., 2d Sess., Washington, D. C.: Government Printing Office, 1964; **Federal Reserve Bulletin,** May 1963, p. 711.

TABLE 2

Assets of Chain Banks, By Federal Reserve District
June 30, 1962

Federal Reserve District	Assets of Chain Banks (Thousands of dollars)	Percentage of Member Bank Assets*	Assets of Banks Linked by 5 Percent Ownership of† (Thousands of dollars)		Percentage of Member Bank Assets*
			One Individual	Group of Individuals	
1	2,249,214	23.3	66,477	0	0.7
2	3,518,841	5.9	247,497	0	0.4
3	2,328,440	20.0	103,957	3,915	0.9
4	5,801,269	32.3	139,920	0	0.8
5	2,109,928	20.0	190,600	0	1.8
6	3,232,380	25.2	1,103,920	169,298	9.9
7	10,590,319	30.6	1,381,356	0	4.0
8	2,055,075	25.7	241,158	58,883	3.8
9	531,162	9.1	293,569	14,097	5.3
10	4,503,119	43.3	2,158,674	54,104	21.3
11	7,102,965	54.6	1,435,272	294,019	13.3
12	748,943	2.0	183,988	0	0.5
Total	44,771,655	19.3	7,546,388	594,316	3.5

* Based on member bank assets at the end of 1962.

† Column figures represent assets of all member banks in which one individual or a group of individuals own at least 5 percent or more of the outstanding stock in each of two or more banks.

Source: **Twenty Largest Stockholders; Rand McNally International Bankers Directory,** 1962 ed.; **Federal Reserve Bulletin;** loc. cit.

TABLE 3

Assets of Chain Banks, By Federal Reserve District
June 30, 1962
(Thousands of dollars)

Federal Reserve District	Assets of Banks Linked by Individuals Owning—*							
	10% or More		15% or More		20% or More		25% or More	
	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals
1	54,374	8,227	22,579	16,637	22,579	16,637	22,579	0
2	75,993	0	75,993	0	41,704	21,060	41,704	7,028
3	0	0	0	0	0	0	0	0
4	77,888	18,050	10,960	5,862	10,960	0	4,793	0
5	34,314	0	7,481	0	0	0	0	0
6	678,978	212,834	424,561	334,256	424,561	250,551	251,459	228,806
7	666,986	157,331	527,820	138,599	131,100	73,244	63,433	118,550
8	175,151	30,804	167,037	8,114	131,015	32,292	103,899	23,272
9	192,037	11,926	185,621	8,643	156,125	25,636	123,258	31,784
10	1,485,742	272,576	787,493	823,881	157,324	1,133,614	132,349	188,459
11	833,223	111,740	734,460	65,820	574,506	72,055	242,645	75,323
12	59,602	4,780	12,261	0	0	12,261	0	12,261
Total	4,334,288	828,268	2,956,266	1,401,812	1,649,874	1,637,350	986,119	685,483

* Column figures represent assets of all member banks in which one individual or a group of the same individuals own at least 10, 15, 20, and 25 percent of more of the outstanding stock in each of two or more banks.

Sources: **Twenty Largest Stockholders; Rand McNally International Bankers Directory,** 1962.

TABLE 4

Chain Banking, By Region and State
June 30, 1962

Geographic Region And State	Number of Chain Banks	Percentage of Member Banks	Percentage of Ins. Com. Banks	Number of Banks Linked by 5% Ownership of*		Percentage of Member Banks	Percentage of Ins. Com. Banks
				One Individual	Group of Individuals		
United States	**1,146**	**19.0**	**8.7**	**526**	**30**	**9.2**	**4.2**
New England	**62**	**23.8**	**15.9**	**13**	**0**	**5.0**	**3.3**
Maine	2	7.1	4.9	2	0	7.1	4.9
New Hampshire	17	32.7	23.9	2	0	3.8	2.8
Vermont	5	16.7	9.6	2	0	6.7	3.8
Massachusetts	30	26.1	18.6	5	0	4.3	3.1
Rhode Island	3	60.0	37.5	0	0	0.0	0.0
Connecticut	5	16.7	8.3	2	0	6.7	3.3
Middle Atlantic	**161**	**15.6**	**12.9**	**44**	**2**	**6.4**	**5.3**
New York	51	15.6	14.0	16	0	4.9	4.4
New Jersey	32	15.7	13.4	2	0	1.0	0.8
Pennsylvania	78	15.6	12.0	26	2	5.6	4.3
East North Central	**250**	**16.8**	**8.6**	**100**	**2**	**6.9**	**3.5**
Ohio	44	12.2	7.7	11	0	3.0	1.9
Indiana	31	13.7	7.1	15	0	6.6	3.4
Illinois	111	21.2	11.3	57	2	11.3	6.0
Michigan	42	19.6	11.4	9	0	4.2	2.4
Wisconsin	22	13.8	3.9	8	0	5.0	1.4

TABLE 4 (Continued)

Geographic Region And State	Number of Chain Banks	Percentage of Member Banks	Percentage of Ins. Com. Banks	Number of Banks Linked by 5% Ownership of*		Percentage of Member Banks	Percentage of Ins. Com. Banks
				One Individual	Group of Individuals		
West North Central	**148**	**14.9**	**4.5**	**83**	**7**	**7.1**	**2.1**
Minnesota	19	9.1	2.8	14	0	6.7	2.0
Iowa	13	8.0	2.0	6	0	3.7	0.9
Missouri	28	16.5	4.6	12	0	7.1	2.0
North Dakota	8	20.0	5.2	5	2	17.5	4.6
South Dakota	10	17.2	5.7	8	0	13.8	4.6
Nebraska	29	21.0	7.2	18	2	14.5	5.0
Kansas	41	19.3	7.0	20	3	10.8	3.9
South Atlantic	**140**	**21.7**	**8.6**	**64**	**3**	**10.4**	**4.1**
Delaware	1	20.0	5.3	0	0	0.0	0.0
Maryland	8	13.3	6.2	0	0	0.0	0.0
Dist. of Col.	2	25.0	18.2	0	0	0.0	0.0
Virginia	38	19.4	12.8	15	0	7.7	5.1
West Virginia	22	20.2	12.3	9	0	8.3	5.0
North Carolina	1	2.9	0.6	1	0	2.9	0.6
South Carolina	2	6.3	1.4	2	0	6.3	1.4
Georgia	4	5.9	1.1	0	0	0.0	0.0
Florida	62	46.6	19.1	37	3	30.1	12.3
East South Central	**37**	**12.1**	**3.5**	**11**	**2**	**4.2**	**1.2**
Kentucky	15	15.2	4.4	1	2	3.0	0.9
Tennessee	9	11.1	3.1	2	0	2.5	0.7
Alabama	11	11.8	4.6	8	0	8.6	3.4
Mississippi	2	5.9	1.1	0	0	0.0	0.0
West South Central	**264**	**28.4**	**14.5**	**157**	**13**	**18.3**	**9.3**
Arkansas	12	15.4	5.1	4	2	7.7	2.6
Louisiana	6	11.3	3.1	2	0	3.8	1.0
Oklahoma	82	36.3	21.2	64	0	28.3	16.5
Texas	164	28.7	16.2	87	11	17.2	9.7
Mountain	**83**	**26.5**	**16.7**	**54**	**1**	**17.6**	**11.0**
Montana	15	17.0	12.3	11	0	12.5	9.0
Idaho	10	58.8	32.3	8	0	47.1	25.8
Wyoming	9	22.0	16.1	4	0	9.8	7.1
Colorado	34	34.7	20.2	17	1	18.4	10.7
New Mexico	11	28.9	18.6	11	0	28.9	18.6
Arizona	1	25.0	10.0	1	0	25.0	10.0
Utah	2	9.5	4.4	1	0	4.8	2.2
Nevada	1	20.0	14.3	1	0	20.0	14.3
Pacific	**1**	**0.9**	**0.4**	**0**	**0**	**0.0**	**0.0**
Washington	0	0.0	0.0	0	0	0.0	0.0
Oregon	0	0.0	0.0	0	0	0.0	0.0
California	1	1.8	0.8	0	0	0.0	0.0
Alaska	0	0.0	0.0	0	0	0.0	0.0
Hawaii	0	0.0	0.0	0	0	0.0	0.0

* Number of member banks in which one individual or a group of the same individuals own at least 5 percent or more of the outstanding stock in each of two or more banks.

Sources: **Twenty Largest Stockholders;** Federal Deposit Insurance Corporation, **Assets, Liabilities, and Capital Accounts of Commercial and Mutual Savings Banks,** Report of Call No. 60, June 30, 1962.

TABLE 5

Chain Banking, By Region and State

June 30, 1962

Geographic Region and State	Number of Banks Linked by Individuals Owning—*							
	10% or More		15% or More		20% or More		25% or More	
	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals
United States	**278**	**66**	**194**	**73**	**143**	**84**	**106**	**69**
New England	**9**	**2**	**4**	**2**	**4**	**2**	**4**	**0**
Maine	0	2	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	0	0	0
Vermont	2	0	2	0	2	0	2	0
Massachusetts	5	0	0	2	0	2	0	0
Rhode Island	0	0	0	0	0	0	0	0
Connecticut	2	0	2	0	2	0	2	0
Middle Atlantic	**12**	**0**	**10**	**0**	**4**	**4**	**4**	**2**
New York	8	0	8	0	2	4	2	0
New Jersey	2	0	2	0	2	0	2	2
Pennsylvania	2	0	0	0	0	0	0	0
East North Central	**42**	**16**	**29**	**10**	**19**	**12**	**13**	**10**
Ohio	4	4	2	2	2	0	0	0
Indiana	7	2	3	0	2	0	2	0
Illinois	24	6	21	4	12	10	10	8
Michigan	4	2	2	2	2	2	0	2
Wisconsin	3	2	1	2	1	0	1	0
West North Central	**53**	**13**	**41**	**20**	**26**	**23**	**22**	**18**
Minnesota	11	2	11	0	9	0	9	0
Iowa	0	2	0	2	0	0	0	0
Missouri	8	1	4	5	0	5	0	1
North Dakota	5	0	3	2	2	3	2	3
South Dakota	4	1	4	1	3	2	3	2
Nebraska	15	2	13	2	6	7	4	5
Kansas	10	5	6	8	6	6	4	7
South Atlantic	**30**	**7**	**15**	**11**	**13**	**9**	**9**	**8**
Delaware	0	0	0	0	0	0	0	0
Maryland	0	0	0	0	0	0	0	0
District of Col.	0	0	0	0	0	0	0	0
Virginia	2	0	0	0	0	0	0	0
West Virginia	3	0	0	0	0	0	0	0
North Carolina	0	0	0	0	0	0	0	0
South Carolina	2	0	2	0	0	0	0	0
Georgia	0	0	0	0	0	0	0	0
Florida	23	7	13	11	13	9	9	8
East South Central	**7**	**2**	**5**	**0**	**5**	**0**	**5**	**0**
Kentucky	1	0	1	0	1	0	1	0
Tennessee	0	2	0	0	0	0	0	0
Alabama	6	0	4	0	4	0	4	0
Mississippi	0	0	0	0	0	0	0	0
West South Central	**94**	**20**	**66**	**24**	**54**	**24**	**35**	**23**
Arkansas	4	2	4	0	4	0	2	0
Louisiana	0	0	0	0	0	0	0	0
Oklahoma	42	10	31	15	25	15	17	14
Texas	48	8	31	9	25	9	16	9

TABLE 5 (Continued)

Geographic Region and State	Number of Banks Linked by Individuals Owning—*							
	10% or More		15% or More		20% or More		25% or More	
	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals
Mountain	**31**	**6**	**24**	**6**	**18**	**10**	**14**	**8**
Montana	6	0	6	0	6	0	4	2
Idaho	3	2	2	0	0	2	0	2
Wyoming	4	0	4	0	2	2	0	2
Colorado	12	4	7	6	5	6	5	2
New Mexico	5	0	5	0	5	0	5	0
Arizona	0	0	0	0	0	0	0	0
Utah	0	0	0	0	0	0	0	0
Nevada	1	0	0	0	0	0	0	0
Pacific	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Washington	0	0	0	0	0	0	0	0
Oregon	0	0	0	0	0	0	0	0
California	0	0	0	0	0	0	0	0
Alaska	0	0	0	0	0	0	0	0
Hawaii	0	0	0	0	0	0	0	0

* Number of member banks in which one individual or a group of the same individuals own at least 10, 15, 20, and 25 percent or more of the outstanding stock in each of two or more banks.

Sources: **Twenty Largest Stockholders;** F.D.I.C., **Assets, Liabilities, and Capital Accounts of Commercial and Mutual Savings Banks,** loc. cit.

TABLE 6

Assets of Chain Banking, By Region and State
June 30, 1962

Geographic Region and State	Assets of Chain Banks (Thousands of dollars)	Percentage of Member Bank Assets	Percentage of Ins. Com. Bank Assets	Assets of Banks Linked by 5% Ownership of* (Thousands of dollars)		Percentage of Member Bank Assets	Percentage of Ins. Com. Bank Assets
				One Individual	Group of Individuals		
United States	**44,771,655**	**19.3**	**16.3**	**7,546,388**	**594,316**	**3.5**	**3.0**
New England	**2,249,214**	**22.0**	**18.7**	**66,477**	**0**	**0.7**	**0.6**
Maine	8,227	1.4	1.0	8,227	0	1.4	1.1
New Hampshire	138,309	38.7	28.0	3,876	0	1.1	0.8
Vermont	37,977	16.2	8.0	4,559	0	1.9	1.0
Massachusetts	865,988	14.9	13.5	31,795	0	0.5	0.5
Rhode Island	921,260	96.3	90.0	0	0	0.0	0.0
Connecticut	277,453	12.2	9.7	18,020	0	0.8	0.6
Middle Atlantic	**8,105,545**	**10.6**	**10.0**	**426,619**	**3,915**	**0.6**	**0.5**
New York	2,003,517	3.7	3.6	215,900	0	0.4	0.4
New Jersey	1,845,158	23.8	21.4	31,597	0	0.4	0.4
Pennsylvania	4,256,870	28.3	24.7	179,122	3,915	1.2	1.1
East North Central	**13,982,286**	**29.9**	**25.2**	**1,504,822**	**7,051**	**3.2**	**2.7**
Ohio	3,119,074	26.5	23.7	59,962	0	0.5	0.5
Indiana	1,240,439	29.4	22.5	452,420	0	10.7	8.2
Illinois	6,271,476	34.7	30.0	850,863	7,051	4.7	4.1
Michigan	3,109,453	32.8	28.9	88,115	0	0.9	0.8
Wisconsin	241,844	7.4	4.6	53,462	0	1.6	1.0

TABLE 6 (Continued)

Geographic Region and State	Assets of Chain Banks (Thousands of dollars)	Percentage of Member Bank Assets	Percentage of Ins. Com. Bank Assets	Assets of Banks Linked by 5% Ownership of* (Thousands of dollars)		Percentage of Member Bank Assets	Percentage of Ins. Com. Bank Assets
				One Individual	Group of Individuals		
West North Central	**3,759,022**	**26.2**	**17.2**	**1,643,108**	**42,413**	**11.8**	**7.7**
Minnesota	148,956	4.3	3.0	71,450	0	2.0	1.4
Iowa	147,861	7.9	4.1	90,273	0	4.9	2.5
Missouri	2,328,971	48.2	33.5	880,999	0	18.2	12.7
North Dakota	63,420	15.5	8.8	24,576	14,097	9.5	5.3
South Dakota	85,642	14.8	9.8	72,772	0	12.5	8.3
Nebraska	262,830	19.0	13.7	76,597	5,285	5.9	4.3
Kansas	721,342	40.7	25.0	426,441	23,031	25.4	15.6
South Atlantic	**5,238,959**	**29.7**	**21.2**	**1,246,582**	**169,298**	**8.0**	**5.7**
Delaware	334.831	64.7	41.0	0	0	0.0	0.0
Maryland	1,138,867	60.3	40.5	0	0	0.0	0.0
District of Col.	498,857	30.1	26.9	0	0	0.0	0.0
Virginia	333,852	10.4	8.6	132,916	0	4.1	3.4
West Virginia	184,794	16.0	12.1	40,285	0	3.5	2.6
North Carolina	9,918	0.5	0.3	9,918	0	0.5	0.3
South Carolina	7,481	1.0	0.6	7,481	0	1.0	0.6
Georgia	33,349	1.4	1.4	0	0	0.0	0.0
Florida	2,697,010	66.7	46.2	1,055,982	169,298	30.3	21.0
East South Central	**844,753**	**11.7**	**8.0**	**52,731**	**21,028**	**1.0**	**0.7**
Kentucky	554,616	33.3	20.9	4,793	21,028	1.5	1.0
Tennessee	192,924	6.6	5.0	14,141	0	0.5	0.4
Alabama	78,013	4.1	3.2	33,797	0	1.8	1.4
Mississippi	19,200	2.6	1.2	0	0	0.0	0.0
West South Central	**8,317,370**	**46.2**	**37.0**	**2,135,797**	**324,823**	**13.7**	**11.0**
Arkansas	232,208	22.7	15.3	131,015	30,804	15.8	10.6
Louisiana	339,676	14.1	10.1	94,246	0	3.9	2.8
Oklahoma	865,428	32.7	27.4	687,873	0	26.0	21.8
Texas	6,880,058	57.6	47.8	1,222,663	294,019	12.7	10.5
Mountain	**1,988,119**	**27.2**	**22.8**	**470,252**	**25,788**	**6.8**	**5.7**
Montana	80,977	10.4	8.9	66,665	0	8.5	7.3
Idaho	316,347	48.5	42.2	47,667	0	7.3	6.4
Wyoming	151,284	37.8	32.2	16,838	0	4.2	3.6
Colorado	1,182,826	59.7	49.4	92,285	25,788	6.0	4.9
New Mexico	110,476	17.6	13.3	110,476	0	17.6	13.3
Arizona	13,324	1.0	0.8	13,324	0	1.0	0.8
Utah	89,080	8.9	7.8	79,192	0	7.9	6.9
Nevada	43,805	8.9	7.7	43,805	0	8.9	7.7
Pacific	**286,387**	**0.8**	**0.8**	**0**	**0**	**0.0**	**0.0**
Washington	0	0.0	0.0	0	0	0.0	0.0
Oregon	0	0.0	0.0	0	0	0.0	0.0
California	286,387	1.0	1.0	0	0	0.0	0.0
Alaska	0	0.0	0.0	0	0	0.0	0.0
Hawaii	0	0.0	0.0	0	0	0.0	0.0

* Assets of all member banks in which one individual or a group of the same individuals own at least 5 percent or more of the outstanding stock in each of two or more banks.

Sources: **Twenty Largest Stockholders; Rand McNally International Bankers Directory,** 1962; **F.D.I.C. Assets, Liabilities, and Capital Accounts of Commercial and Mutual Savings Banks,** loc. cit.

TABLE 7

Assets of Chain Banking, By Region and State
June 30, 1962
(Thousands of dollars)

Geographic Region and State	Assets of Banks Linked by Individuals Owning—*							
	10% or More		15% or More		20% or More		25% or More	
	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals
United States	**4,334,288**	**828,268**	**2,956,266**	**1,401,812**	**1,649,874**	**1,637,350**	**986,119**	**685,483**
New England	**54,374**	**8,277**	**22,579**	**16,637**	**22,579**	**16,637**	**22,579**	**0**
Maine	0	8,227	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	0	0	0
Vermont	4,559	0	4,559	0	4,559	0	4,559	0
Massachusetts	31,795	0	0	16,637	0	16,637	0	0
Rhode Island	0	0	0	0	0	0	0	0
Connecticut	18,020	0	18,020	0	18,020	0	18,020	0
Middle Atlantic	**107,691**	**0**	**75,993**	**0**	**41,704**	**21,060**	**41,704**	**7,028**
New York	44,396	0	44,396	0	10,107	21,060	10,107	7,028
New Jersey	31,597	0	31,597	0	31,597	0	31,597	0
Pennsylvania	31,698	0	0	0	0	0	0	0
East North Central	**769,597**	**161,328**	**595,201**	**130,408**	**166,189**	**105,536**	**65,636**	**141,822**
Ohio	41,397	18,050	6,167	5,862	6,167	0	0	0
Indiana	247,159	14,375	154,516	0	4,982	0	4,982	0
Illinois	411,102	93,600	405,596	89,243	126,118	87,080	58,451	123,366
Michigan	46,705	18,456	26,719	18,456	26,719	18,456	0	18,456
Wisconsin	23,234	16,847	2,203	16,847	2,203	0	2,203	0
West North Central	**1,286,569**	**197,398**	**739,010**	**532,072**	**147,447**	**937,374**	**137,187**	**125,194**
Minnesota	57,371	9,699	57,371	0	44,868	0	44,868	0
Iowa	0	14,053	0	14,053	0	0	0	0
Missouri	841,577	6,439	535,191	312,825	0	833,655	0	28,267
North Dakota	24,576	0	18,160	6,416	8,752	15,824	8,752	15,824
South Dakota	58,640	2,227	58,640	2,227	51,055	9,812	51,055	9,812
Nebraska	59,606	13,588	52,585	13,588	25,709	33,704	21,656	20,116
Kansas	244,799	151,392	17,063	182,963	17,063	44,379	10,856	51,175
South Atlantic	**688,142**	**198,693**	**413,742**	**334,256**	**406,261**	**250,551**	**233,159**	**228,806**
Delaware	0	0	0	0	0	0	0	0
Maryland	0	0	0	0	0	0	0	0
District of Col.	0	0	0	0	0	0	0	0
Virginia	9,596	0	0	0	0	0	0	0
West Virginia	17,237	0	0	0	0	0	0	0
North Carolina	0	0	0	0	0	0	0	0
South Carolina	7,481	0	7,481	0	0	0	0	0
Georgia	0	0	0	0	0	0	0	0
Florida	653,828	198,693	406,261	334,256	406,261	250,551	233,159	228,806
East South Central	**29,943**	**14,141**	**23,093**	**0**	**23,093**	**0**	**23,093**	**0**
Kentucky	4,793	0	4,793	0	4,793	0	4,793	0
Tennessee	0	14,141	0	0	0	0	0	0
Alabama	25,150	0	18,300	0	18,300	0	18,300	0
Mississippi	0	0	0	0	0	0	0	0

TABLE 7 (Continued)

Geographic Region and State	Assets of Banks Linked by Individuals Owning—*							
	10% or More		15% or More		20% or More		25% or More	
	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals	One Individual	Group of Individuals
West South Central	**1,188,187**	**200,153**	**954,903**	**321,972**	**739,535**	**236,234**	**366,263**	**144,894**
Arkansas	131,015	30,804	131,015	0	131,015	0	103,899	0
Louisiana	0	0	0	0	0	0	0	0
Oklahoma	273,485	59,857	138,964	256,152	83,550	164,179	64,693	74,133
Texas	783,687	109,492	684,924	65,820	524,970	72,055	197,671	70,761
Mountain	**209,785**	**48,328**	**131,745**	**66,467**	**103,066**	**69,958**	**96,498**	**37,739**
Montana	22,528	0	22,528	0	22,528	0	16,380	6,148
Idaho	15,797	4,780	12,261	0	0	12,261	0	12,261
Wyoming	16,838	0	16,838	0	10,087	6,751	0	6,751
Colorado	66,920	43,548	36,221	66,467	26,554	50,946	36,221	12,579
New Mexico	43,897	0	43,897	0	43,897	0	43,897	0
Arizona	0	0	0	0	0	0	0	0
Utah	0	0	0	0	0	0	0	0
Nevada	43,805	0	0	0	0	0	0	0
Pacific	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Washington	0	0	0	0	0	0	0	0
Oregon	0	0	0	0	0	0	0	0
California	0	0	0	0	0	0	0	0
Alaska	0	0	0	0	0	0	0	0
Hawaii	0	0	0	0	0	0	0	0

* Assets of all member banks in which one individual or a group of the same individuals own at least 10, 15, 20, and 25 percent or more of the outstanding stock in each of two or more banks.

Sources: **Twenty Largest Stockholders; Rand McNally International Bankers Directory, 1962.**

TABLE 8

Number and Location of Chain Banks Linked Exclusively By Type of Corporate Stockholder

June 30, 1962

Federal Reserve District	Type of Corporate Stockholder						Number of Banks
	Mutual Savings Banks	Commercial Banks	Insurance Companies	Holding Companies	Nominees	Other	
1	30	0	5	0	2	2	39
2	1	1	2	0	16	5	25
3	0	4	0	0	8	6	18
4	0	6	2	0	15	8	31
5	0	6	0	0	8	2	16
6	0	2	0	3	4	2	11
7	1	7	0	0	21	7	36
8	0	5	2	0	2	2	11
9	0	1	0	0	10	3	14
10	0	2	0	0	5	2	9
11	0	4	0	5	2	6	17
12	0	0	0	0	1	0	1
Total	32	38	11	8	94	45	228

Source: **Twenty Largest Stockholders.**

TABLE 9

Assets of Chain Banks Linked Exclusively By Corporate Stockholders
June 30, 1962
(Thousands of dollars)

Federal Reserve District	Type of Corporate Stockholder							Percentage of Member Bank Assets
	Mutual Savings Banks	Commercial Banks	Insurance Companies	Holding Companies	Nominees	Other	Assets of Banks	
1	891,890	0	54,380	0	15,740	26,210	988,220	10.2
2	23,148	21,406	737,263	0	679,764	375,996	1,837,577	3.1
3	0	115,330	0	0	1,232,106	380,615	1,728,051	14.9
4	0	48,387	19,097	0	2,237,853	2,519,506	4,824,843	26.9
5	0	116,226	0	0	1,150,458	20,266	1,286,950	12.2
6	0	33,815	0	25,176	211,277	153,111	423,379	3.3
7	1,073,207	73,066	0	0	5,476,317	935,681	7,558,271	21.9
8	0	72,493	292,762	0	10,905	41,127	417,287	5.2
9	0	2,548	0	0	135,132	13,651	151,331	2.6
10	0	28,221	0	0	101,356	141,666	271,243	2.6
11	0	16,960	0	39,131	17,442	71,514	145,047	1.1
12	0	0	0	0	262,505	0	262,505	0.7
Total	1,988,245	528,452	1,103,502	64,307	11,530.855	4,679,343	19,894,704	8.6

Sources: **Twenty Largest Stockholders; Rand McNally International Bankers Directory, 1962; F.D.I.C., Assets, Liabilities, and Capital Accounts of Commercial and Mutual Savings Banks,** loc. cit.

TABLE 10

Location, Number, and Size of Chain Systems
June 30, 1962

Federal Reserve District	Number of Banks Affiliated in a Given Chain System											Number of Chain Systems	Number of Chain Banks
	2	3	4	5	6	7	8	9	11	15	21		
1	12	6	1	0	0	2	1	0	0	0	0	22	68
2	23	4	4	1	0	0	0	0	0	0	0	32	79
3	26	3	1	1	0	0	0	0	0	0	0	31	70
4	16	6	2	2	1	0	0	0	0	0	0	27	74
5	25	4	2	0	0	0	0	0	0	0	0	31	70
6	13	4	5	1	0	0	0	0	0	0	1	24	84
7	47	9	7	1	1	0	2	0	0	0	0	67	176
8	22	8	0	0	0	0	0	0	0	0	0	30	68
9	22	1	4	1	0	0	0	0	0	0	0	28	68
10	43	12	6	1	0	0	3	1	1	1	0	68	210
11	39	16	5	2	2	0	1	1	0	0	0	66	185
12	2	1	1	0	1	0	0	0	0	0	0	5	17
Total Chains	290	74	38	10	5	2	7	2	1	1	1	431	
Banks	580	222	152	50	30	14	56	18	11	15	21		1,169

Source: **Twenty Largest Stockholders.**

TABLE 11

Distribution of Chain Banks By Federal Reserve District and By Percentage of Stock Ownership Linking Banks

June 30, 1962

Percentage of Stock Ownership	Number of Chain Banks in Federal Reserve District												Number of Chain Banks	Percentage
	1	2	3	4	5	6	7	8	9	10	11	12		
0.0- 4.9	5	20	21	11	20	15	33	18	7	36	38	2	226	19.7
5.0- 9.9	23	26	29	26	30	12	46	23	18	29	37	4	303	26.4
10.0-14.9	14	5	7	12	10	10	25	10	8	13	27	3	144	12.6
15.0-19.9	0	7	6	4	3	3	13	4	3	14	15	0	72	6.3
20.0-24.9	6	4	1	5	4	9	10	4	4	17	15	3	82	7.2
25.0-34.9	4	3	1	7	0	4	12	8	2	24	16	0	81	7.1
35.0-49.9	6	3	1	2	0	4	13	2	9	22	14	1	77	6.7
50.0-74.9	4	3	1	7	2	12	8	2	18	30	19	2	108	9.4
75.0 or more	0	3	2	0	0	17	7	0	4	16	4	0	53	4.6
Total	62	74	69	74	69	86	167	71	73	201	185	15	1,146	100.0

Source: **Twenty Largest Stockholders.**

TABLE 12

Number and Percentage Distribution of Chain Banks, By Asset Size, and Percentage Distribution of All Member Banks

June 30, 1962

Amount of Assets (Thousands of dollars)	Number of Chain Banks	Percentage of all Chain Banks	Percentage of all Member Banks
500-999	18	1.6	1.4
1,000-1,999	77	6.7	8.3
2,000-4,999	336	29.3	30.1
5,000-9,999	247	21.5	24.1
10,000-24,999	256	22.4	20.3
25,000-49,999	83	7.2	7.0
50,000-99,999	46	4.0	3.7
100,000-499,999	66	5.8	3.9
500,000 and over	17	1.5	1.2
Total	1,146	100.0	100.0

Sources: **Twenty Largest Stockholders; Rand McNally International Bankers Directory,** 1962; U. S. Congress, House Committee on Banking and Currency, Subcommittee on Domestic Finance, **The Structure of Ownership of Member Banks and the Pattern of Loans Made on Hypothecated Bank Stock,** 88th. Cong., 2d Sess., Washington, D.C.: Government Printing Office, 1964, p. 8.

TABLE 13

Number and Percentage Distribution of Chain Banks, By Size of Population Center

June 30, 1962

Size of Population Center	Number of Chain Banks	Percentage of Chain Banks
1,000 and under	148	12.9
1,000-2,500	175	15.3
2,500-5,000	170	14.8
5,000-10,000	172	15.0
10,000-25,000	172	15.0
25,000-50,000	85	7.4
50,000-100,000	72	6.3
100,000-250,000	46	4.0
250,000-500,000	32	2.8
500,000 and over	74	6.5
Total	1,146	100.0

Sources: **Twenty Largest Stockholders; Rand McNally International Bankers Directory,** 1962.

TABLE 14

Location, Number, Size of Systems, and Percentage of County Deposits Held By Chain Systems With All Affiliated Banks Located In One County

June 30, 1962

State	Number of Chain Systems	Number of Banks in Systems				Number of Chain Banks	Number of Systems and Percentage of County Deposits Held*				
		2	3	4	5		0-20	21-40	41-60	61-80	81-100
Alabama	2	2	0	0	0	4	0	1	0	1	0
Alaska	0	0	0	0	0	0	0	0	0	0	0
Arizona	0	0	0	0	0	0	0	0	0	0	0
Arkansas	2	2	0	0	0	4	0	1	1	0	0
California	0	0	0	0	0	0	0	0	0	0	0
Colorado	5	4	1	0	0	11	1	2	0	1	1
Connecticut	2	1	1	0	0	5	2	0	0	0	0
Delaware	0	0	0	0	0	0	0	0	0	0	0
District of Columbia	0	0	0	0	0	0	0	0	0	0	0
Florida	16	9	5	2	0	41	6	10	0	0	0
Georgia	0	0	0	0	0	0	0	0	0	0	0
Hawaii	0	0	0	0	0	0	0	0	0	0	0
Idaho	1	1	0	0	0	2	0	0	0	0	1
Illinois	34	27	6	1	0	76	18	8	7	0	1
Indiana	8	7	1	0	0	17	2	0	4	2	0
Iowa	2	2	0	0	0	4	1	0	0	1	0
Kansas	3	3	0	0	0	6	0	0	3	0	0
Kentucky	1	1	0	0	0	2	0	0	1	0	0
Louisiana	1	1	0	0	0	2	0	0	0	0	1
Maine	1	1	0	0	0	2	0	1	0	0	0
Maryland	1	1	0	0	0	2	0	1	0	0	0
Massachusetts	9	6	2	1	0	22	9	0	0	0	0
Michigan	10	10	0	0	0	20	3	2	3	1	1
Minnesota	4	4	0	0	0	8	2	0	2	0	0
Mississippi	0	0	0	0	0	0	0	0	0	0	0
Missouri	5	4	0	0	1	13	2	1	1	1	0
Montana	3	3	0	0	0	6	0	2	1	0	0
Nebraska	6	5	1	0	0	13	1	0	4	1	0
Nevada	0	0	0	0	0	0	0	0	0	0	0
New Hampshire	5	5	0	0	0	10	5	0	0	0	0
New Jersey	6	6	0	0	0	12	3	2	1	0	0
New Mexico	3	3	0	0	0	6	0	0	1	1	1
New York	12	10	1	1	0	27	5	5	1	0	1
North Carolina	0	0	0	0	0	0	0	0	0	0	0
North Dakota	1	1	0	0	0	2	0	0	1	0	0
Ohio	9	8	0	1	0	20	0	2	4	3	0
Oklahoma	12	9	2	1	0	28	2	4	4	1	1
Oregon	0	0	0	0	0	0	0	0	0	0	0
Pennsylvania	23	21	1	1	0	49	10	12	1	0	0
Rhode Island	1	1	0	0	0	2	0	0	0	1	0
South Carolina	1	1	0	0	0	2	0	0	1	0	0
South Dakota	1	0	1	0	0	3	0	0	0	1	0
Tennessee	2	2	0	0	0	4	0	0	0	1	1
Texas	27	19	6	1	1	65	7	9	7	0	4
Utah	0	0	0	0	0	0	0	0	0	0	0
Vermont	0	0	0	0	0	0	0	0	0	0	0

TABLE 14 (Continued)

State	Number of Chain Systems	Number of Banks in Systems				Number of Chain Banks	Number of Systems and Percentage of County Deposits Held*				
		2	3	4	5		0-20	21-40	41-60	61-80	81-100
Virginia	13	12	1	0	0	27	0	4	4	3	2
Washington	0	0	0	0	0	0	0	0	0	0	0
West Virginia	5	5	0	0	0	10	0	2	3	0	0
Wisconsin	3	3	0	0	0	6	2	0	0	1	0
Wyoming	2	2	0	0	0	4	0	0	0	1	1
Total	242	202	29	9	2	537	81	69	55	21	16

* "County Deposits" include deposits of commercial banks and mutual savings banks in states where mutual savings banks are located.

Sources: **Twenty Largest Stockholders; Rand McNally International Bankers Directory,** 1962; Board of Governors of the Federal Reserve System, **Distribution of Bank Deposits by Counties and Standard Metropolitan Areas,** June 30, 1962.

TABLE 15

Number and Deposits of Member and Nonmember Banks Operating In Chain Systems At Selected Times

Year	All Chain Banks				Member Banks				Nonmember Banks			
	Number	Percentage of all Com. Banks	Deposits (Millions of dollars)	Percentage of all Com. Banks	Number	Percentage of all Chain Banks	Deposits (Millions of dollars)	Percentage of all Chain Banks	Number	Percentage of all Chain Banks	Deposits (Millions of dollars)	Percentage of all Chain Banks
Dec.												
1939*	424	2.9	883	1.6	198	46.7	684	77.5	226	53.3	199	22.5
1941*	455	3.2	1,501	2.1	222	48.8	1,316	87.7	233	51.2	185	12.3
1943*	454	3.4	2,859	2.7	236	52.0	2,518	88.1	218	48.0	341	11.9
1945*	522	3.9	4,628	3.1	255	48.9	3,916	84.6	267	51.1	712	15.4
June												
1962	2,296†	17.5‡	52,672†	19.2‡	1,146	50.0	44,772	85.0	1,150†	50.0	7,900†	15.0

* Data refer to chain systems composed of three or more banks.
† Estimated from data derived for member banks.
‡ Percentage of all insured commercial banks.

Sources: Board of Governors of the Federal Reserve System, **Banking and Monetary Statistics,** Washington, D. C.: National Capital Press, 1943, pp. 318, 322; **Federal Reserve Bulletin,** June 1944, p. 615, and April 1947, p. 463; and Tables 1 and 2.

► RICHARD V. COTTER

Capital Ratios and Capital Adequacy

It has been a common practice to assess the adequacy of a bank's capital by means of certain ratios or formulas. Generally, these ratios describe capital funds in relation to the bank's assets or deposits.

The present study is designed to test the usefulness of such ratios as tools for analyzing a bank's capital funds. It was assumed that if the relationship of capital funds to various balance sheet items has been an important determinant of bank failure, there should be significant differences in the relative levels of capital funds in banks that have survived financial panics and depressions and those that have not. Such differences were not found among the banks studied, and thus it was concluded that the ratios of capital to deposits, capital to total assets, and capital to risk assets would not have been useful in determining the need for additional capital in those cases.

Significant differences were, however, observed for certain capital ratios proposed by the writer. This paper will test the usefulness of those ratios. Data computed from balance sheets of West Coast banks that failed between 1921 and 1933, and similar data from other banks that were successful in maintaining their solvency, are presented and analyzed in

Richard V. Cotter is Assistant Professor of Finance at the University of Nevada. This paper is based upon a portion of the writer's unpublished doctoral dissertation, "Capital Adequacy and Commercial Bank Failures," University of Oregon, 1965. Dissertation research was conducted with the support of a Harold Stonier Fellowship in Banking sponsored by the American Bankers Association for which grateful acknowledgement is made.

the first section. Following this, there is a summary of the results of the analysis, and a presentation of conclusions.

I. Statistical Tests

The statistical analysis is limited to data obtained for national banks in the States of California, Oregon, and Washington. The results, however, are not inconsistent with the findings of a related nationwide study which will be described below.

About two-thirds of all of the national bank failures in Oregon, Washington, and California during the last one hundred years occurred between 1921 and 1933. For the nation, each of the years during this period was characterized by more than one bank failure for each 100 banks. This high rate occurred, too, for national bank failures in the three West Coast states for most years during this period. The rates of bank failure per hundred banks for all commercial banks, all national banks, and for national banks in Oregon, Washington, and California are shown in Table 1.

TABLE 1

Number of Failures per 100 Banks 1921-1933

Year	All Commercial Banks	National Banks in			
		Nation	Calif.	Oreg.	Wash.
1921	1.7	.6	.6	2.1	1.0
1922	1.2	.6	1.0	0.	0.
1923	2.2	1.1	.4	2.1	0.
1924	2.7	1.5	0.	0.	4.5
1925	2.2	1.5	.7	1.0	1.8
1926	3.5	1.5	1.1	0.	1.9
1927	2.5	1.2	1.7	2.1	0.
1928	1.9	.7	0.	1.1	0.
1929	2.6	.8	.5	0.	.9
1930	5.7	2.2	1.0	0.	1.0
1931	10.6	6.0	4.2	4.4	6.0
1932	7.8	4.5	8.3	10.0	5.8
1933	28.4	22.5	16.3	19.6	28.6

Source: Computed from data presented in U.S. Comptroller of the Currency, **Annual Reports** and U.S. Board of Governors of the Federal Reserve System, **All-Bank Statistics—1896-1955.**

Because these years were characterized by relatively high rates of failure, it was felt that the years preceding them would be suitable for meaningful comparison of capital ratios for banks that failed and for those that did not fail. These years of high failure rate occurred during a period in which economic conditions were such that inadequate capitalization would be likely to have resulted in bank failure.

For purposes of analysis, two groups of bank failures were distinguished: those banks that failed between 1921 and 1930, and those that failed between 1931 and 1933. The period of interest for this analysis was not the years of failure, but the years prior to and leading up to failure. Accordingly, the years chosen for statistical comparisons were those between 1924 and 1930 for banks that failed during 1931, 1932, and 1933, and the years between 1914 and 1920 for banks that failed during the period between 1921 and 1930.

Those banks that had been chartered for less than ten years before their failure were not included. It was felt that the elimination of banks that had been in existence only for a relatively short time would enable a presumption to be made of reasonably competent management for those that remained as part of the study.

It was noted, too, that there have been very few failures of large banks in Oregon, Washington, and California. During the period under study, failures occurred in only three West Coast national banks with assets of more than ten million dollars. Inasmuch as failure seemingly has been less of a problem for these larger banks, and inasmuch as larger banks as a group generally have had lower levels of capital funds in relation to other balance sheet items, it was decided to eliminate from this study any bank with more than ten million dollars of total assets.

Similar requirements were applied in choosing nonfailing banks for the study. Only banks which were organized prior to 1914 and which continued in operation at least until 1941 were chosen. This requirement eliminated a number that disappeared because of liquidation or merger with other banks during the intervening period. Because banking statistics do not include information about the financial circumstances involved in voluntary liquidation and merger cases, it was decided to exclude these altogether.

From those which remained, a random sample of 40 banks was chosen for each of the two periods—1914-20, and 1924-30. Data relating to these banks were used for comparisons with those banks that had failed. One group of 40 nonfailing banks was compared with the group of 23 banks that failed between 1921 and 1930, and the other group of 40 nonfailing banks was compared with the group of 40 banks that failed between 1931 and 1933.

Several ratios were computed from data for each of the banks in these groups for each of the years studied. Two of these ratios have received widespread use in recent years—the ratios of capital funds to deposits, and capital funds to risk assets, with "risk assets" defined as total assets less cash and U. S. government securities. For these ratios, the analysis revealed only small differences between groups of bank failures and nonfailures, and these differences were great enough to be statistically significant during only a few years.

It was reasoned that perhaps these ratios fail to differentiate between bank failures and nonfailures because they fail to differentiate between different types of capital needs. Capital funds are necessary in a commercial bank for three types of needs—to obtain a charter and begin operations, to provide funds to sustain operations, and to provide protection for creditors in case of liquidation.

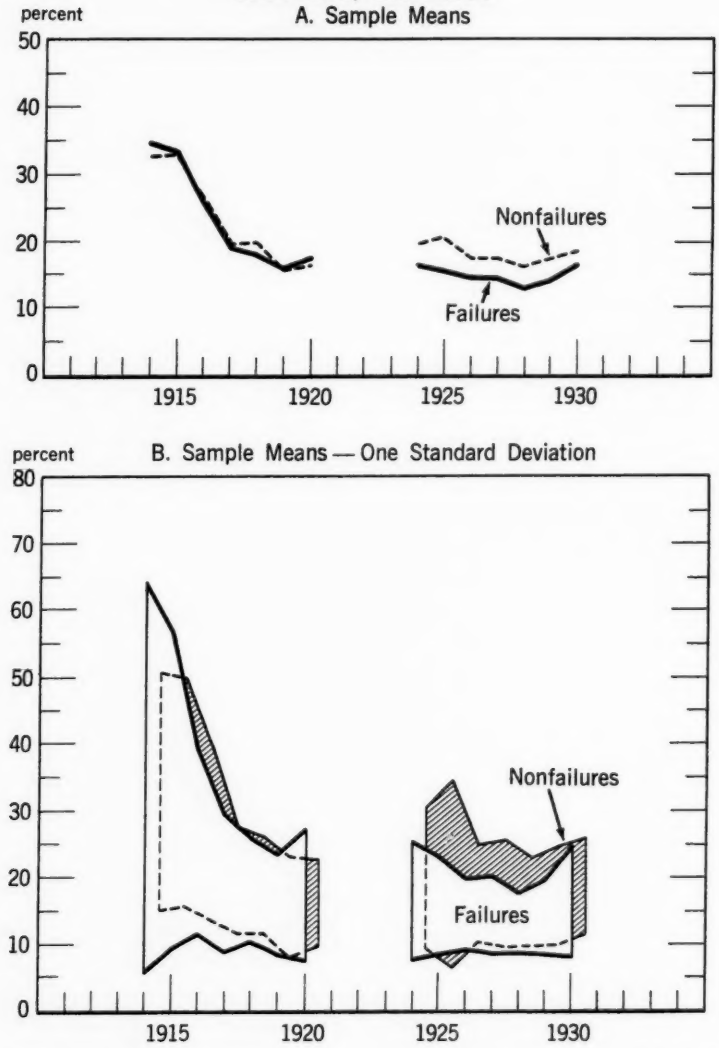
Technically, the funds represented by a bank's capital stock are not available for protection of creditors except in liquidation. For this reason, tests were made of capital ratios that exclude capital stock from the computation of capital funds. Two ratios were used: excess capital funds to deposits, and excess capital funds to risk assets, with "excess capital funds" defined as total capital funds less capital stock. Two other ratios were also considered: capital-total assets, and excess capital-total assets. Because of the high correlation between assets and deposits, the results of the analysis were substantially the same as for the ratios of capital to deposits and excess capital to deposits. The discussion in this paper is therefore limited to the first four ratios.

The values of these ratios are summarized in Figures 1–4. In Figure 1, page 336, the upper chart shows the average value (arithmetic mean) for each group of banks. The lower chart utilizes the standard deviation of the ratio values to show graphically something about the dispersion of values within the group. The average value for each of the ratios during almost every year under study was higher for those banks that did not fail than for those that failed. In most cases, however, the differences between the average values are relatively small when the amount of variation within groups is considered. The lower chart of each figure encloses the areas between the points representing the average value of the ratio plus and minus one standard deviation. Within this range one would expect to find about two-thirds of the ratios for the individual banks within the group.[1] There is a substantial degree of overlap of this range for the two groups of banks. The "solid" figure for the failing banks is "superimposed" over the shaded figure for the nonfailing banks.

[1] About 95 percent of the values could be expected to be found within the range of the mean plus and minus two standard deviations.

Figure 1

Ratio of Capital Funds to Deposits
1914-1920, 1924-1930



A. Testing for Equal Means, Individual Years

An effort was made to determine whether there were significant differences between the ratio values for the failing banks and those for the nonfailing banks. One approach was to compare the means of the ratio values for each group of banks for each of the individual years under study. This was accomplished by hypothesizing equality of the arithmetic means for each year, and using the "t" or "student" distribution to determine whether observed differences in sample data were statistically significant.[2]

[2] Use of the standardized t-test requires an assumption regarding the homogeneity of the

TABLE 2

Ratio of Capital Funds to Deposits
Individual Years
1914-1920, 1924-1930

Year	Testing Hypothesis of Equal Means		
	Mean of Failures (Percent)	Mean of Non-Failures (Percent)	t
1914	34.91	32.59	.35
1915	33.09	32.60	.09
1916	25.42	26.42	.28
1917	19.10	19.65	.23
1918	18.09	19.72	.76
1919	15.87	15.47	.21
1920	17.28	16.29	.48
1924	16.44	19.74	1.47
1925	15.68	20.50	1.89
1926	14.55	17.42	1.99
1927	14.40	17.46	1.96
1928	13.03	16.23	2.58*
1929	14.03	17.24	2.15*
1930	16.40	18.59	1.24

* Differences significant at .05 level.

The results of these tests are summarized in the tables that follow. Reference to Table 2 will serve to describe some of the information presented in these tables. Shown are the sample means used for the t-test computations to test the hypothesis regarding equality of the means. The t-values that were significant at the 0.01 level are marked with two asterisks (**). If t-values were significant at the 0.05 level they are marked with one asterisk (*). In general, the ratios which have been widely used for a number of years were found to reveal differences between groups of banks that were not consistently significant at either level. The other capital ratios were found to show differences that were more consistently significant, often at the 0.01 level. Of the first two ratios, capital funds-risk assets seemed to have more significant differences between groups. Of the other two, the ratio of excess capital funds to risk assets was shown consistently to have significant differences between the groups of banks, significant at the 0.01 level in all but 3 of the 14 years.

B. Analysis of Variance

Because these tests did not consistently show significant differences between groups of banks for values of some ratios when analysis was made year by year, it was decided to test for significant differences in the ratio values for each *group* of years taken as a whole. An analysis of variance with a nested classification model was used for this purpose. Three hypotheses of interest were statistically tested for each period of years (1914-20, 1924-30) for each of the ratios: (1) that the mean of the ratio values for the group of banks that failed is equal to the mean of the ratio values for the group of nonfailures; (2) that the means of the ratio values for the individual banks within the group of failures were equal to each other; and (3) that the means of the ratio values for the individual banks within the group of nonfailures were equal to each other. The results of tests of these hypotheses would indicate whether observed differences between the two groups of banks for each period were significant, and also whether such differences among the individual banks within each of the two groups were significant.

In general, results of the analyses are consistent with those of the t-tests. They show that there was more significant variation among individual banks within

variances of the groups of data being tested. Homogeneity of the variances was tested with an F-test, which compares the relative sizes of the variances of the two groups of data. If homogeneity was not present, an approximate t-test utilizing an adjusted pooled variance was used to test equality of the means. The approximate test was necessary only in a few instances.

TABLE 3

Ratio of Capital Funds to Deposits Compared to 10 Percent Standard 1914-1920, 1924-1930

Year	No. of Failing Banks			No. of Nonfailures		
		with Ratios			with Ratios	
	in Sample	Less than 10%	More than 10%	in Sample	Less than 10%	More than 10%
1914	23	1	22	40	0	40
1915	23	0	23	40	0	40
1916	23	1	22	40	0	40
1917	23	3	20	40	1	39
1918	23	3	20	40	1	39
1919	23	4	19	40	7	33
1920	23	5	18	40	6	34
1924	40	7	33	40	3	37
1925	40	9	31	40	6	34
1926	40	9	31	40	6	34
1927	40	10	30	40	5	35
1928	40	9	31	40	7	33
1929	40	9	31	40	4	36
1930	40	10	30	40	2	38

groups than there was between groups. In every case, the variation among banks *within* groups was significant at the 0.01 level, but only one ratio—excess capital funds-risk assets—shows significant differences *between* groups at the 0.01 level for both periods of years. Two ratios showed significant differences between groups at the 0.01 level for the period 1924-30—the ratios of excess capital funds to deposits, and of excess capital funds to risk assets.

II. *Capital Ratios*

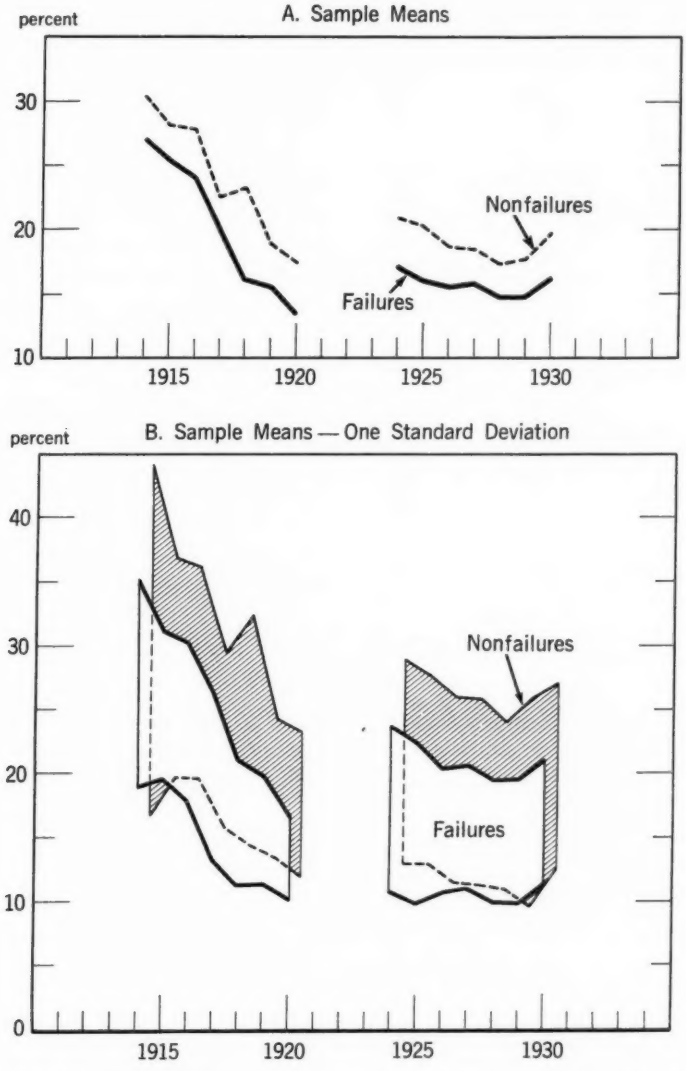
A. Capital Funds to Deposits

Figure 1 and Table 2 summarize the analysis for the ratio of capital funds to deposits. In the t-test of data for individual years, the differences between group means were significant only in 1928 and 1929, and then only at the 0.05 level. The analysis of variance reveals no significant differences between groups for the period 1914-20, and the hypothesis of equal means therefore could not be rejected for those years. But for the period 1924-30, the variation between groups is significant at the 0.05 level. Differences in the value of this ratio are not consistently significant. There are significant differences at the 0.01 level, though, among individual banks within both groups for both periods of years, and the hypothesis of equal means for individual banks within groups was rejected.

It is interesting to compare the observed data shown in Figure 1 with the traditional rule which considered that capital funds amounting to less than 10 percent of deposits were inadequate. If an imaginary line is drawn across the bottom chart at the 10 percent level, it can be seen that this rule would have indicated inadequate capital in only a small proportion of the banks that failed, and would at the same time have signalled inadequate capital funds for some of those in the group that did not fail. Table 3 shows the number of banks in each group of those in the study whose ratios

Figure 2

Ratio of Capital Funds to Risk Assets
1914-1920, 1924-1930



of capital funds to deposits fell below and above the 10 percent level. It appears that the 10 percent rule would have been virtually useless for determining capital adequacy for West Coast banks.

B. Capital Funds to Risk Assets

For the ratio of capital funds to risk assets, a summary of analysis is presented in Figure 2 and Table 4. Differences in the value of this ratio between banks that failed and banks that did not fail are significant at the 0.05 level in 8 of the 14 years studied—more years than for either of the other two commonly used ratios. During three of those eight years—1918,

TABLE 4

Ratio of Capital Funds to Risk Assets
Individual Years
1914-1920, 1924-1930

Year	Testing Hypothesis of Equal Means		
	Mean of Failures (Percent)	Mean of Non-failures (Percent)	t
1914	26.99	30.44	1.25
1915	25.27	28.25	1.40
1916	23.98	27.84	1.95
1917	19.78	22.57	1.57
1918	16.10	23.32	4.13**
1919	15.46	18.75	2.46*
1920	13.45	17.51	3.56**
1924	17.13	20.92	2.31*
1925	16.12	20.31	2.74**
1926	15.54	18.67	2.27*
1927	15.85	18.53	1.93
1928	14.67	17.44	2.18*
1929	14.71	17.70	1.98
1930	16.06	19.76	2.64*

* Differences significant at .05 level.
** Differences significant at .01 level.

1920, and 1925—the differences were significant at the 0.01 level. The analysis of variance for the two periods of years revealed significant differences between groups of banks for both periods at the 0.05 level. Differences between individual banks within groups again were significant at the 0.01 level for both periods.

If the rule of capital funds equal to 20 percent of risk assets had been used as a standard of capital adequacy, most of the banks from the sample, both failing and nonfailing, would have been rated as having insufficient capital funds at some time during the years under study. Particularly during the later years, more banks had ratios of capital funds to risk assets below than above 20 percent. This comparison is summarized in Table 5, and can be seen graphically in Figure 2 if an imaginary line is drawn across the bottom chart at the 20 percent level. Along with other so-called rules-of-thumb, the 20 percent

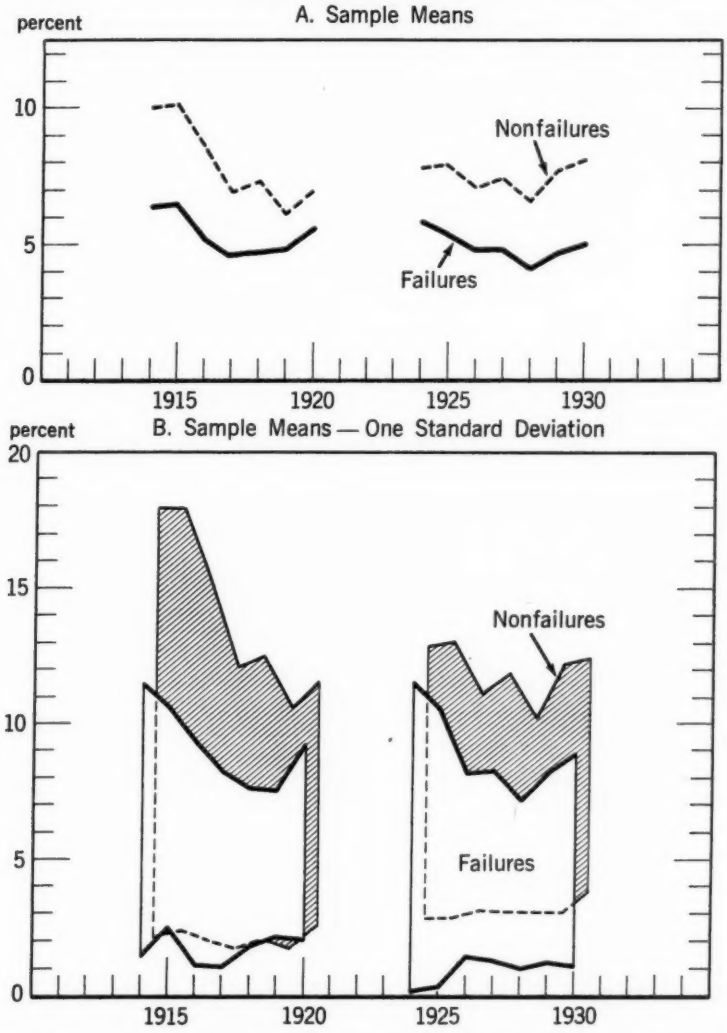
TABLE 5

Ratio of Capital Funds to Risk Assets
Compared to 20 Percent Standard, 1914-1920, 1924-1930

Year	No. of Failing Banks			No. of Nonfailures		
		with Ratios			with Ratios	
	in Sample	Less than 20%	More than 20%	in Sample	Less than 20%	More than 20%
1914	23	5	18	40	8	32
1915	23	6	17	40	11	29
1916	23	9	14	40	9	31
1917	23	16	7	40	16	24
1918	23	18	5	40	17	23
1919	23	19	4	40	26	14
1920	23	21	2	40	31	9
1924	40	27	13	40	20	20
1925	40	29	11	40	23	17
1926	40	30	10	40	26	14
1927	40	32	8	40	25	15
1928	40	34	6	40	29	11
1929	40	34	6	40	26	14
1930	40	31	9	40	24	16

Figure 3

Ratio of Excess Capital Funds to Deposits 1914-1920, 1924-1930



standard would have been of very limited use during the periods under study.

C. Excess Capital Funds to Deposits

Similar analysis was extended to the ratios that incorporate capital funds less capital stock instead of total capital funds. Figure 3 and Table 6 summarize the analysis for the ratio of excess capital funds to deposits. Differences between groups of banks were found to be significant at least at the 0.05 level during 10 of the 14 years studied. During the last five years of the later period—1926 to 1930—differences were found to be significant at the 0.01 level. The analysis of variance revealed significant differences at the 0.01 level between groups of banks for the period between 1924 and 1930,

TABLE 6

**Ratio of Excess Capital Funds to Deposits
Individual Years
1914-1920, 1924-1930**

Year	Testing Hypothesis of Equal Means		
	Mean of Failures (Percent)	Mean of Non-failures (Percent)	t
1914	6.40	10.03	2.11*
1915	6.51	10.10	2.43*
1916	5.22	8.65	2.40*
1917	4.56	6.89	1.99
1918	4.71	7.28	2.52*
1919	4.75	6.13	1.52
1920	5.56	6.96	1.31
1924	5.83	7.85	1.67
1925	5.38	7.93	2.24*
1926	4.76	7.10	2.79**
1927	4.76	7.37	2.90**
1928	4.14	6.59	3.27**
1929	4.71	7.55	3.13**
1930	5.05	8.12	3.33**

* Differences significant at .05 level.
** Differences significant at .01 level.

but not for the years between 1914 and 1920. As with previous ratios, differences among individual banks within the groups were significant at the 0.01 level for both periods of years.

D. Excess Capital Funds to Risk Assets

The measure that would have given the best results for predicting bank failures was the ratio of excess capital funds to risk assets. As can be seen in Figure 4, most of the banks in the group that failed had excess capital funds amounting to less than about 9 percent of risk assets. But even so, a substantial number of the nonfailing banks were in the same category.

The analysis for this ratio is summarized in Figure 4 and Table 7. Differences between groups of banks were significant at the 0.01 level during all but three of the years under study; and they were significant at the 0.05 level for those three years as well. The analysis of variance revealed significant differences at the 0.01 level between groups of banks for both periods of years. As with the other ratios, though, differences among banks within each group were significant at the 0.01 level for both periods of years.

The qualified success that this ratio might have had as a standard of capital adequacy seems to support the idea that capital needs are related to the degree of risk associated with a bank's assets. Relating total capital funds to risk assets revealed more significant differences between groups of bank failures and nonfailures than did relating them to deposits or total assets. And relating capital funds less capital stock to risk assets had similar results. But the more significant differences between groups that were apparent when capital stock was excluded from capital funds suggest that it is important to distinguish between different types of capital needs.

TABLE 7

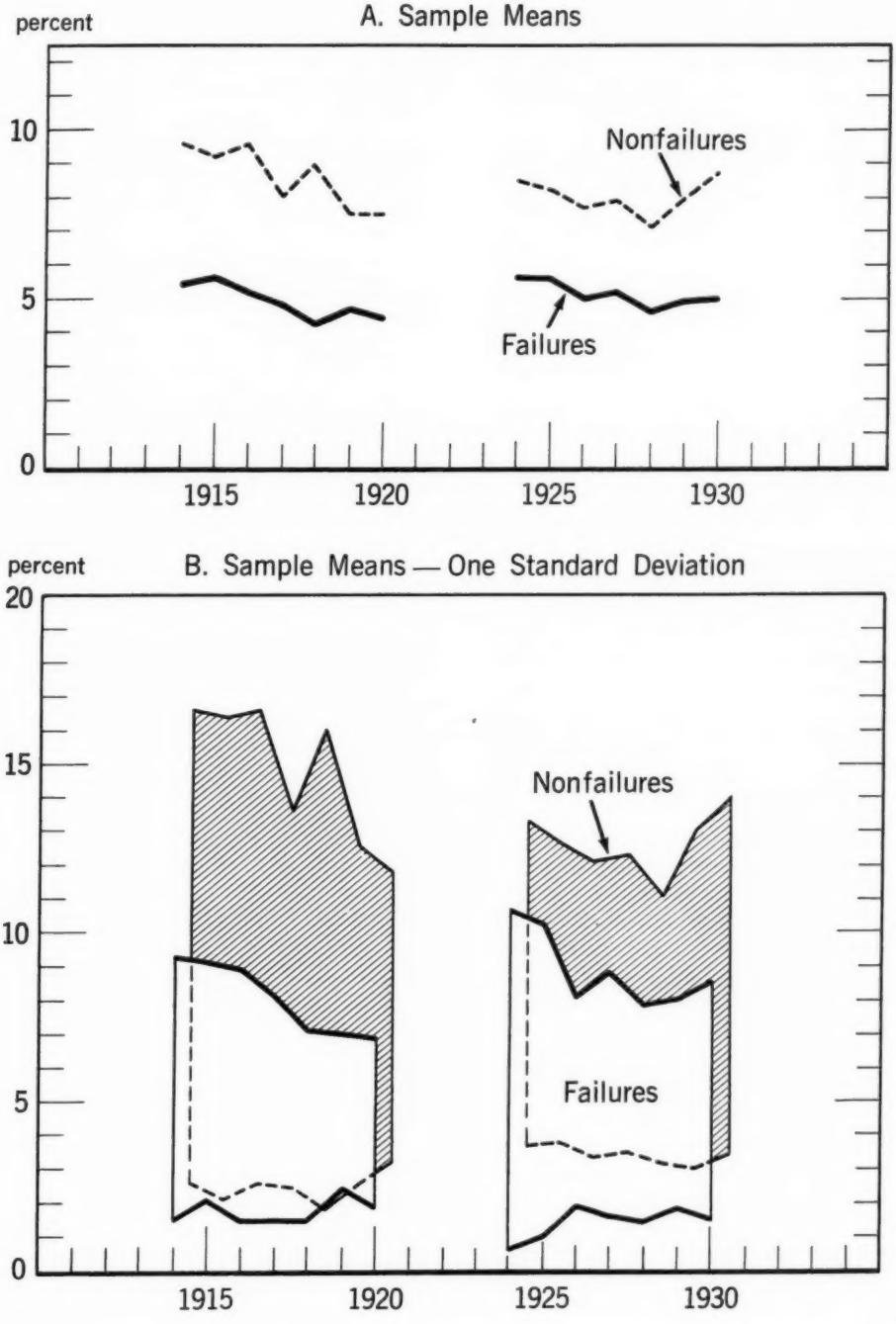
**Ratio of Excess Capital Funds to Risk Assets
Individual Years
1914-1920, 1924-1930**

Year	Testing Hypothesis of Equal Means		
	Mean of Failures (Percent)	Mean of Non-Failures (Percent)	t
1914	5.45	9.57	3.01**
1915	5.60	9.24	2.68*
1916	5.16	9.64	3.29**
1917	4.83	7.95	2.74**
1918	4.33	8.90	3.60**
1919	4.69	7.50	3.03**
1920	4.36	7.53	3.66**
1924	5.61	8.55	2.67*
1925	5.58	8.22	2.61*
1926	4.95	7.69	3.23**
1927	5.17	7.91	3.02**
1928	4.60	7.14	3.19**
1929	4.93	8.00	3.30**
1930	4.98	8.68	3.70**

* Differences significant at .05 level.
** Differences significant at .01 level.

Figure 4

Ratio of Excess Capital Funds to Risk Assets
1914-1920, 1924-1930



Minimum amounts of capital stock are required to obtain a national bank charter. Further increases or reductions in capital stock must be approved by the Comptroller of the Currency. The funds that are represented by capital stock are available to meet operating needs, and *in liquidation* will serve as a loss-absorber for the protection of creditors. But these funds technically are not available to prevent failure. A national bank becomes technically insolvent if it suffers losses great enough to impair its capital stock.

III. *Comparison with Other Studies*

The results of our analysis are supported by comparison with the results of another study. In the late 1930's Horace Secrist, of Northwestern University, undertook a statistical study of national banks that had failed and others that had not failed.[3] His sample of failing national banks was drawn from the entire country; nonfailing banks were chosen from the Seventh and Tenth Federal Reserve Districts. His conclusions with respect to the 10 percent ratio of capital funds to deposits were:

> Conventional thought supports the belief that banks fail because their capital structure is inadequate to support their deposit liabilities. Indeed, it is not infrequently claimed that a ratio of at least 10 per cent should obtain for safety, the implied assumption being that the higher the ratio the less the chance of failure. The facts seem to be otherwise. An analysis of 6784 ratios of failing national banks from 1921 to the years immediately before failure, and of 1221 ratios from 1921 to 1931, inclusive, for national banks which do not fail, gives conclusive evidence that such beliefs are without foundation.
>
> From a comparative study of the average and prevailing ratio-levels for such banks en masse and individually it is concluded, among other things, as follows:
>
> First. The ratios are lower for non-failures than for failures, and the earlier the time of failure the higher the average and prevailing levels. . . .
>
> Second. The assertion that banks in order to remain solvent must have a ratio of at least 10 per cent is illusory. . . . According to this standard the "safest" institutions are those first to fail, and the longer banks continue to operate, the less secure they appear to be.[4]

And he reached similar conclusions in regard to the ratio of capital funds to total liabilities:[5]

> From such an analysis it is concluded that between failures and non-failures, and failures occurring at different times, the comparative relationships of the relative levels are of the same order as those encountered when the capital funds are expressed in terms of deposit liabilities. Changing the base in terms of which to measure the comparative size of the total capital funds still leaves them relatively highest for the banks failing earliest, and higher for the failures than for the survivors.[6]

In contrast to the present study, Secrist found that average levels of the ratios of capital funds to deposits and capital funds to total liabilities were higher for failing banks than for those banks that did not fail. He did conclude, however, that there was no relationship between a high level for either of these ratios and a bank's ability to maintain solvency and avoid failure. Differences between relative levels of these ratios in the two studies might be accounted for by differences in the composition of the two samples. Secrist's study did not eliminate large banks, which generally seem to

[3] Horace Secrist, *National Bank Failures and Non-Failures*, Bloomington, Indiana: The Principia Press, 1938.

[4] Secrist, *Ibid.*, p. 18.

[5] Total liabilities equal total assets. This is the same ratio as that of capital funds to total assets which was examined in the present study.

[6] *Ibid.*, p. 19.

have had lower capital ratios, and it seems likely that his control group of nonfailing banks would have had a relatively higher number of large banks than his group of failures. The conclusions which he reached regarding relative levels of these ratios for failures and nonfailures are consistent with the results obtained by the writer in related research when levels of capital ratios were correlated with the rate of bank failures for the banking system.

IV. *Summary and Conclusions*

Our analysis suggests that certain capital ratios might have some value as reliable measures of capital adequacy but that their acceptance for this purpose should be subject to various reservations. Other ratios seem to be relatively useless for determining capital adequacy.

Underlying this analysis is the assumption that capital funds can be considered to be adequate if they are sufficient to prevent failure—that is, to maintain solvency by absorbing losses which might occur under adverse circumstances. If capital funds are sufficient for this purpose, they are likely to be sufficient for other purposes as well. It also was assumed that if a measure is to be useful in determining capital adequacy of individual banks, its determination must be feasible during relatively prosperous times. If a bank needs additional capital funds, it is more likely that they can be raised under favorable economic conditions than at a time when the situation has become critical.

For two commonly used capital ratios —capital funds to deposits and to risk assets—the analysis revealed differences between groups of bank failures and nonfailures. But these differences were relatively small, and were great enough to be statistically significant during only a few years. Differences in values of the ratio of capital funds to risk assets appeared to be significant during a greater number of years and significant at higher levels, but still for only 4 years out of 14. Variation among banks within each of the two groups was greater by far than the variation between groups. If the values of these ratios for banks that were studied are compared with values that have been used as standards of adequacy, nearly as many nonfailures fall below the standards as do failures. It is concluded that these ratios would have served very poorly to indicate which banks were likely to be suspended because of financial difficulties.

There are two possible explanations for this. Either capital adequacy is a relatively unimportant factor in preventing bank failure, or, alternatively, these ratios do a relatively poor job of measuring capital adequacy. The first alternative does not seem defensible on any reasonable grounds. Commercial banks need capital funds to operate, and must maintain solvency to continue operations. When a bank sustains losses, insolvency will follow unless they can be absorbed by capital funds—funds obtained from outside sources or retained from earnings.

The second alternative seems more likely. It is suggested that these ratios seem relatively useless for determining capital adequacy because they fail to differentiate between different types of capital needs. Technically, the funds represented by a bank's capital stock are not available for protection of creditors except in liquidation. For this reason, tests were made of other capital ratios which exclude capital stock from the computation of capital funds. Differences between failures and nonfailures were more consistently significant, and significant at higher levels, for these ratios than for either of those which include capital stock as part of capital funds. Of these ratios—excess capital funds to deposits and excess capital funds to risk assets—the latter shows the most promise as an indicator of capital adequacy.

The ratios of excess capital funds to

risk assets could have been used rather successfully during the period under study as a measure of capital adequacy. If a value of 9 percent for this ratio had been used as a standard to signal the need of additional capital funds, most of the banks that later failed had ratios which would have fallen below the standard. The disadvantage of using such a standard, as with any of the ratios, is that a substantial number of nonfailures had such low values, too. But these cases were fewer with this ratio than for other ratios that were compared.

It is interesting to note that while average levels of the more commonly used capital ratios are lower today than they were during the period between 1914 and 1930, average levels for the ratio of excess capital funds to risk assets are slightly higher than during that period. This does not imply anything about adequacy of capital funds in the American banking system. But it does suggest that the capital levels of individual banks—at least that portion of capital funds that is available as a loss-absorber to sustain operations—are not appreciably lower than in the period leading up to the Great Depression. And since that time many changes have occurred which would tend to reduce the amount of capital funds that would be needed to maintain solvency under adverse conditions.

►ERNEST SCHWARZENBACH AND JACK ZWICK

The European Response to U. S. Capital Restrictions

As a result of the U.S. program for solving the balance of payments problem, a perceptible shift of the burden of international financing from New York to Europe has taken place and some spokesmen in Europe are worried over the prospect of capital shortages. Anxiety has been expressed regarding the direct effects of the American program on the economic positions of Canada, Japan and the United Kingdom—countries which have been most cooperative in assisting U.S. authorities to resolve balance of payments difficulties, yet which are heavily dependent on American financial sources. On the U.S. side, concern has been voiced that the growth of American-based multinational companies will be stunted by the U.S. policies and that the competitive position of American firms in world markets will be impaired.

Renewed criticism by Europeans has accompanied the recent wave of bond flotations in Europe by subsidiaries of U.S. corporations. Fifteen major U.S. corporations borrowed more than $340 million in European markets during the last six months of 1965, as shown in Table 1. These borrowings accounted for 24 percent of foreign bond flotations in European markets and, at the same time, contributed to a growth of more than 30 percent in total foreign issues in Europe during 1965. As Table 3 indicates, the trend is continuing in 1966.

To help clarify these issues, this paper examines the roles of the U.S. government and American corporations in the crowded history of international borrowing during the past five years. Particular

Ernest Schwarzenbach is President of Sony Corporation of America and until recently was Vice-President and Director of Smith Barney and Company. Jack Zwick is Assistant Professor of Business at the Graduate School of Business Administration, Columbia University.

TABLE 1

Foreign Bond Issues of American-Based Companies, 1965

Offering Date	U.S. Corporation and Issuing Subsidiary	Type of Financing	Denomination	Amount (Millions of dollars)	Maturity (Years)	Coupon Rate (Percent)	Offering Yield (Percent)
June	Socony Mobil Oil Co., Inc. Mobil Oil Holdings, S.A.	Straight debt*	Sterling and Deutsche-marks	$28	15	5.75	6.06
July	U.S. Rubber Company U.S. Rubber Uniroyal Holdings, S.A.	Straight debt*	Sterling and Deutsche-marks	$14	15	6.00	6.31
September	American Cyanamid Co. Cyanamid International Development Corp.	Straight debt*	Foreign dollars	$20	15	5.75	5.93
	Gulf Oil Corp. Transocean/Gulf Oil Co.	Straight debt*	Deutsche-marks	$25	15	5.75	5.90
October	Socony Mobil Oil Co., Inc. Mobil Oil Holdings, S.A.	Straight debt*	Swiss francs	$10.4	15	4.75	4.75
	Monsanto Company Monsanto International Finance Co.	Convertible bonds*	Foreign dollars	$25	20	4.50	4.50
	Standard Oil Co. Inc. Amoco Oil Holdings, S.A.	Straight debt*	Foreign dollars	$25	20	5.75	5.79
November	E.I. DuPont de Nemours & Co. Dupont Europa Holdings, S.A.	Straight debt*	Deutsche-marks	$25	15	6.00	6.00
	W. R. Grace & Co. W. R. Grace Overseas Development Corp.	Straight debt*	Foreign dollars	$20	15	5.75	5.98
December	Federated Department Stores, Inc. Federated Department Stores International	Convertible bonds*	Foreign dollars	$20	20	4.50	4.50
	Bristol-Myers Co. Bristol-Myers International Finance Co.	Convertible bonds*	Foreign dollars	$15	15	4.50	4.50
	General Foods Corp. General Foods Overseas	Straight debt*,†	Foreign dollars	$12	15	5.75	5.91
	Owens-Corning Fiberglas Corp. Owens-Corning Fiberglas International Corp.	Straight debt*,†	Foreign dollars	$ 6.5	15	5.75	5.79
	International Business Machines Corp. IBM World Trade Corp.	Straight debt	Deutsche-marks	$30	15	6.00	6.00
	General Electric Company Overseas Capital Corp.	Convertible bonds*	Foreign dollars	$50	20	4.25	4.25
	B.F. Goodrich Company International Finance Corp.	Straight debt*,†	Foreign dollars	$15	17	5.75	5.90
			Total	$340.9			

* Guaranteed by the parent company.
† Placed privately.

attention is devoted to the examination of American capital restrictions and the adaptation of the European capital markets to these restrictions.

I. *The U.S. Role In International Finance Before July 1963*

The U.S. first became active in international lending during the second half of the 1920's. American bankers had little experience in lending abroad and many foreign borrowers defaulted during the Great Depression of the 1930's when tariff walls were erected and debt moratoria were declared. Institutional and individual U.S. investors suffered heavy losses. Many states passed laws prohibiting or restricting investments in foreign bonds. Strong prejudices were created and it remained difficult to sell such issues during the next three decades.

After the Second World War, the United States became heavily involved in supplying aid and capital to the rest of the world. Capital was first supplied by the U.S. government largely to foreign governments. Later the U.S. capital market also became accessible to large- and high-credit foreign private borrowers, whose securities were generally purchased by institutions and other investors in low tax brackets. Foreign offerings in New York were generally more certain of quick placement in a comparatively stable market with a fairly good after-market than in foreign capital markets. Although much of the foreign borrowing in the U.S. during the early 1950's was Canadian, issuers from a number of countries became prominent after the return to general convertibility in 1958. The availability of higher yields and the efforts of New York investment bankers eager to expand their international lending activities attracted American investors to the foreign issues.

The confidence of foreigners in highly liquid U.S. dollar holdings was of special significance during the postwar period. With fresh memories of wars, inflations and capital restrictions, foreign savers often preferred holding gold at home, and dollars and liquid dollar investments abroad.[1]

Thus, the long- and medium-term American loans to foreigners were partially offset by foreigners putting their own money back into highly liquid dollar assets. In effect, the U.S. performed the function of a financial intermediary during the 1950's by lending long and receiving foreign short-term deposits on investments. The persistent accounting deficit that developed in the traditionally measured balance of payments reflected this process to a considerable degree.[2]

The U.S. balance of payments deficits began in 1949 and stubbornly persisted in each succeeding year except 1957. After a somewhat favorable balance of payments position in 1957, resulting in part from the exceptional difficulties of Britain and France, the U.S. began to experience very large international deficits. U.S. deficits in the years after 1957 were largely caused by these capital movements, which also directly and indirectly contributed to the increases of officially held reserves by the continental European countries. Some dollars were converted to gold, and U.S. gold reserves fell from a postwar high of $24 to $15 billion by 1963.

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[1] Those Europeans who had funds at home and who were willing to invest were inhibited to some extent both by government restrictions on security purchases and by the absence of adequate financial data concerning the status of borrowers. Noninstitutional investment in Europe tended to be concentrated in savings, mortgages, and some common stocks, as most European savers resisted buying corporate debt instruments.

[2] Although the trade gap narrowed as European economies recovered, the United States maintained a surplus on current account throughout the 1950's. See Despres, Kindleberger and Salant, "The Dollar and World Liquidity," *The Economist*, Feb. 5, 1966, p. 526.

II. *The Interest Equalization Tax*

During the last quarter of 1962 and the first half of 1963, the United States balance of payments position was aggravated by increased outflows of long-term portfolio capital. Especially significant was the increase in the volume of security flotations in the U.S. by foreigners, which more than doubled between 1960 and 1963.

On July 18, 1963, President Kennedy announced that he was proposing an Interest Equalization Tax (IET) on the acquisition of foreign securities by Americans from foreign persons, except those with maturities in excess of three years offered by certain underdeveloped countries. The tax was designed to increase a foreigner's cost of raising capital in the U.S. by approximately 1 percent per year. Although the tax was not approved and signed into law until September 2, 1964, it was applied retroactively.

Between 1961 and July 1963, 47 percent of the world's public issues of foreign debt (excluding Canadian issues) was floated in the United States market.[3] In the second half of 1963, following the announcement of the Interest Equalization Tax, the net private capital outflow from the United States (excluding flows to Canada) dropped to $1,560 million from $2,747 million in the first half of the year. The outflow on new issues of foreign bonds dropped from $844 million during the first six months of 1963 to $67 million in the second half. Abroad, the Interest Equalization Tax had the effect of increasing the importance of several national capital markets in Europe for foreign issues, in addition to placing the full burden of financing these issues on non-U.S. investors.

The principal obstacle to large-scale financing in Europe has been the lack of integrated capital markets. Each national market has its own legal restrictions, interest rate structures, and investment opportunities.[4] Access to the various markets has generally been regulated by government authorities, and borrowing and lending has often tended to take place within limits determined by political considerations rather than by market factors. Governmental controls have substantially restricted the free flow of international capital.

With few exceptions, the various European countries have lacked large short-term money markets, while the markets for long-term funds, except in Switzerland, have been even more restricted. Consequently, borrowers in most of these countries have relied heavily on direct bank credit, a more predictable source than the open markets. Except in the United Kingdom where investment banking has developed as a specialized function, underwriting has been performed primarily by commercial banks which deal with customers on a personalized basis. This arrangement has tended to narrow the range for price negotiations between borrowers and lenders. As a consequence of these and other factors, high-grade industrial issuers in Europe have experienced markedly higher capital costs than their counterparts in the United States.

In addition to these impediments and obstacles, in several European countries foreign borrowers have been subjected to special restrictions. These restrictions have generally taken the form of specific approval requirements, limitations on the purchase of foreign exchange, issue and

[3] A sizeable amount of these dollar offerings was purchased by Europeans.

[4] See U. S. Treasury Department, "A Description of Certain European Capital Markets," *Economic Policies and Practices* Series, No. 3, 1964, and "Promoting Increased Foreign Investment in United States Corporate Securities and Increased Foreign Financing for United States Corporations Operating Abroad," Report to the President, Washington, D.C., 1964.

TABLE 2

Foreign Bond Flotations, 1962-1965
(Millions of dollars)

	1965	1964	1963		1962
			After July 18	Before July 18	
Public Issues in the U.S.*	190	116.6	20	257.5	336
Private Placements in U.S.†‡	345	80	47	587	560
Total Issues Placed in U.S.*	535	196.6	67	844.5	896
Public Foreign Issues in Europe					
Foreign dollar bonds	612§	536	15	21	12
Deutschemark bonds	325△	224	15	20	60
Swiss Franc Bonds	70	74	41	95	151
Other European countries	184	39	26	32	68
Multiple currency issues	64□	49	—	—	—
Unit of account issues	—	10	31	12	5
Total Issues Placed in Europe	1,255	932	128	180	296

* Excludes bond issues filed with the SEC but sold entirely abroad. Canadian and IBRD issues are also excluded; these amounted to $350 million in 1965, $150 million in 1964, $25 million in 1963 and $175 million in 1962.
† Canadian private placements are excluded; these amounted to $939 million in 1965, $727 million in 1964, $312 million in 1963 and $250 million in 1962.
‡ Estimates obtained from **Moody's Bond Survey.**
§ $175 million issued by affiliates of U.S. corporations.
△ $80 million issued by affiliates of U.S. corporations.
□ $52 million issued by affiliates of U.S. corporations.
Sources: **Investment Dealers Digest; London Financial Times; Moody's Bond Survey;** Robert Garrett and Michael F. O. Harris, **Underwriting Foreign Bonds: Opportunity and Challenge,** Harvard Business School, unpublished Masters thesis, 1965; Unpublished worksheets of U.S. investment banking firms.

withholding taxes and licenses, and low borrowing priorities in relation to local borrowers.

Following the imposition of the Interest Equalization Tax, European banks and issuing houses took over much of the international underwriting business which previously had moved to New York. London re-emerged as a world financial center during the last half of 1963 and the first half of 1964, largely as a result of the contacts and expertise of the London Merchant Bankers. Although foreign issues were sold in the United Kingdom only in limited amounts because of the prevailing premium on the purchase of dollar securities, the London Bankers placed some $445 million of foreign bonds, largely on the Continent, between July 1963 and May 1965.[5]

American underwriters did not participate in the foreign flotations in Europe during the first five months after enactment of the Interest Equalization Tax. They reappeared in the European markets during 1964, however, when an increasing amount of "foreign dollar bonds" were offered in Europe by syndicates which included American managers. The foreign dollar bonds, which are issued outside the U.S. and purchased in entirety by non-U.S. investors, quickly became the most prevalent denomination for international issuers. The importance of the foreign dollar bond issues, which subsequently were managed by both American and European groups, is shown in Table 2.

The foreign dollar issues appealed to non-U.S. buyers because of the international strength of the U.S. dollar and its freedom from restrictions. In some cases, these securities were listed on the New York Stock Exchange which is the

[5] See Garrett and Harris, *Underwriting Foreign Bonds: Opportunity and Challenge,* unpublished Masters thesis, Harvard Business School, 1965, p. 107.

primary market for trading dollar issues, even among Europeans. Moreover, listing of foreign dollar securities on the NYSE involved registration with the SEC, which is reassuring to the investor desiring strict disclosure.

Roughly $400 million of the $551 million foreign dollar bonds sold in Europe during the last half of 1963 and 1964 was issued by European governments, government agencies, and corporations. A large proportion of these European borrowers were from the Scandinavian countries where sources of medium-and long-term funds are limited. Also important were Japanese issuers who, in response to the Interest Equalization Tax, turned away from the American market and raised more than $110 million by selling foreign dollar bonds in the European markets before the end of 1964.

In addition to foreign dollar bonds, relatively new security forms were used to attract a wider cross-section of European investors. In 1961, Fernand Collin of the Kreditbank in Brussels introduced the first "unit of account" bonds.[6] Essentially, these bonds offered the investor a limited guarantee in case of unilateral devaluations by permitting him to obtain payment in the currency with the least devaluation. Despite the expectations of its initiators, the unit-of-account bond has not been issued frequently because of its inherent complexity and the related difficulties caused by the opposition of some monetary authorities to the inclusion of their currencies in the formula. As indicated in Table 2, the dollar equivalent of $58 million of unit-of-account issues was floated publicly between 1962 and 1966. The $20 million European Coal and Steel Community offering in February 1966 was the first unit-of-account issue in more than 20 months.

In 1962, Herman Abs of the Deutsche Bank had proposed the "parallel loan"—an arrangement whereby different loans with identical rates but at varying issue prices are floated in local currency tranches simultaneously in different markets. Due to the difficulty of obtaining simultaneous authorizations from the governments of each country of issue, however, this type of security was not used until 1965 when the first and only parallel loan to date was offered by the National Electricity Board of Italy.

During 1963, London Merchant Bankers reintroduced "multiple currency" bonds to circumvent problems inherent in other international security forms. Although there have been variations, these bonds have typically permitted the holder to select the currency in which interest and amortization installments are to be paid.[7] As the risks due to depreciation in national currencies are reduced or eliminated for the lender, they are increased for the borrower who in turn assumes the contingent liability associated with parity changes among the specified currencies. As Table 2 indicates, only about $100 million of multiple currency obligations have been issued since 1963.

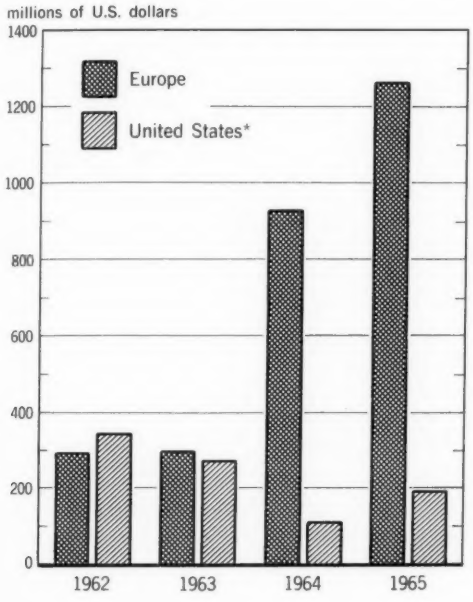
Notwithstanding the limited use of parallel loans, unit-of-account issues, and multiple currency bonds, expansion of the foreign bond markets in Europe has been impressive. Europe's response to the American restrictions is vividly shown in the chart which is based on Table 2. After a period of retrenchment during the last

[6] The European unit of account is a measure devised as a common denominator for Common Market issues to cover the currencies of the 17 countries belonging to the European Payments Union. The unit is based on the gold content of the U.S. dollar, and each of the 17 national currencies was originally valued in units representing its proportion of the gold weight of the dollar.

[7] Although the bond is issued with a main currency—typically U.S. dollars, sterling, or Deutschemarks—the creditor can request payment in the currency of the loan, or in one of several other specified currencies.

Chart

Foreign Public Bond Flotations, (1962-1965)



*U.S. figures exclude Canadian and IBRD issues.
Source: Table 2.

six months of 1963, $932 million of foreign bonds were issued in Europe in 1964, more than a 200 percent increase from the 1963 level. Another gain of more than 30 percent was registered in 1965 as total placements in Europe rose to $1,255 million. If it is assumed that approximately half the foreign public issues in the U.S. during 1962 and the first half of 1963 were sold to European investors, total foreign public issues purchased by Europeans amounted to about $644 million during the 18 months prior to the Interest Equalization Tax. (See Table 2.) During the subsequent 36-month period, $2,315 million of foreign bonds were placed in Europe, or more than three times the volume of purchases during the preceding 18 months. One can safely conclude that the intent of the tax to expand the offering of foreign bonds in Europe has been realized.

III. *"Moral Suasion"—1965*

Due to the continued outflow of private capital and an increase in the aggregate balance of payments deficit, President Johnson announced a new program to reduce U.S. investing abroad in his February 1965 Message to Congress on the balance of payments. The "moral suasion" program asked U.S. corporations to limit direct investment abroad and to reduce holdings of foreign financial assets.

In response, in July of 1965, U.S. corporations began to issue bonds outside the U.S. The Socony Mobil $28 million Deutschemark debt issue that month initiated a wave of 16 foreign financings by finance subsidiaries of 15 U.S. companies, as detailed in Table 1.[8] Five of these issues were straight bonds denominated in Deutschemarks at rates in the 6 percent range. As credit conditions tightened in the Euro-dollar market, rates obtained by the 11 U.S. issuers of foreign dollar bonds approached 6 percent at year's end. The remaining four U.S. companies in search of receptive overseas investors at lower rates issued convertible bonds at yields in the 4¼-4½ percent range.

Thus, in 1965, for the first time, American firms took a major slice (approximately 24 percent) of the international funds raised in Europe. The U.S. borrowers were accommodated in part by the withdrawal of certain Scandinavian issuers whose volume of borrowings contracted about 50 percent from the 1964 level. Equally important, however, was the 35 percent expansion of aggregate foreign flotations in Europe accomplished through the growing use of international underwriting syndicates and refinements in issuing techniques.

In December 1965, the guidelines under the moral suasion program were revised and extended. Industry was re-

[8] The choice of an American-based or European-domiciled issuing subsidiary has been based on tax considerations.

TABLE 3

Foreign Bond Issues of American-Based Companies, 1966

Offering Date	Company	Type of Financing	Denomination	Amount (Millions of dollars)	Maturity (Years)	Coupon Rate (Percent)	Offering Yield (Percent)
January	Phillips Petroleum Co. Phillips Petroleum International Company	Straight debt*	Foreign dollars	25	15	6.00	6.21
February	Avon Products Inc. Avon Overseas Capital Corporation	Straight debt*	Foreign dollars	15	15	6.25	6.51
	Honeywell Inc. Honeywell International Finance Company, S.A.	Straight debt*	Foreign dollars	15	15	6.00	6.42
	Pepsi Cola Co. Pepsi Co. Overseas Corporation	Convertible bonds*	Foreign dollars	30	15	4.50	4.50
	Warner-Lambert Pharmaceutical Co. Warner-Lambert International Capital Corp.	Convertible bonds*	Foreign dollars	15	15	4.25	4.25
	International Telephone and Telegraph	Straight debt	Foreign dollars	15	20	6.00	6.22
	International Standard Electric Corp.	Convertible bonds	Foreign dollars	15	20	4.50	4.69
	Marathon Oil Company Marathon International Finance Co.	Convertible bonds*	Foreign dollars	25	20	4.50	4.50
March	Clark Equipment Company Clark Equipment Overseas Finance Corp.	Convertible bonds*	Foreign dollars	15	15	4.50	4.50
	Chrsyler†, ‡	Convertible	Foreign dollars	50	20		
	W. R. Grace†	Convertible	Foreign dollars	15	20		
	Joy Manufacturing Co.†	Convertible	Foreign dollars	10-15	—		
	Bankers Trust†	Convertible	Foreign dollars	25	—		
	International Harvester†	Convertible	Foreign dollars	25	20		

* Payment of interest and principal guaranteed by parent company.
† Currently in various stages of preparation.
‡ Postponed March 15, 1966.

quested to cut back direct investment abroad to 1964 levels, which for many firms meant reducing overseas expenditures substantially during 1966. The new request has resulted in further overseas borrowing by U.S. corporations, as shown in Table 3, and still more flotations are in various stages of planning.

IV. *Recent Developments*

Certain new developments portend a growing capacity to accommodate international borrowers. A new monetary medium, "the fund unit," was formally recommended in February 1966 by the governing board of the United Nations

Conference on Trade and Development. If adopted in international trade, the fund unit will ease the burden on existing national currencies of providing international liquidity.

Moreover, if the differential between European and American bond rates widens, the American market might conceivably become attractive to international borrowers notwithstanding the Interest Equalization Tax. Already ICI and British Petroleum, among other foreign corporations, have placed debt privately with institutions in the U.S. at rates which compare favorably with those available on the Continent, even after paying the Interest Equalization Tax. Although the U.S. government would probably forestall a substantial volume of foreign security flotations in this country by requesting a moratorium on foreign borrowings, the placement of some international obligations in the U.S. can be expected to ease somewhat the burden imposed on European sources.

There was a notable expansion of international issues denominated in Deutschemarks during 1964 and 1965, as shown in Table 2. Foreign issuers have been attracted by the strength of the German currency, the relative freedom from restrictions afforded international borrowers, and the quality of service rendered by German-managed syndicates. Largely because of the willingness of a few major German banks to assume the risks of international financing, Deutschemark issues of several foreign borrowers, including five American companies, were sold in 1965. For the most part, these bonds were placed in other European countries, particularly in the Swiss market. In December 1965, a comparatively large Deutschemark issue—$30 million of IBM World Trade straight bonds—was distributed without difficulty.

Yet the critical variable in any assessment of Europe's near-term capacity for exporting capital is the foreign dollar bond market which accounted for 50 percent of the volume of foreign bonds issued to the public in Europe during 1965. Unfortunately, the capacity of the dollar bond market in Europe defies precise estimates since ultimate lending sources remain unknown.[9] Lists of dollar bond purchasers compiled by issuing syndicates include the names of major financial institutions in Europe, but no indication of the ultimate lenders is available. It is believed that a large proportion of the dollar bonds sold in the various national markets of Europe eventually find their way to numbered accounts in Switzerland. It has been assumed that many of these accounts represent Middle Eastern oil wealth, flight capital from the Far East and Latin America, and European money seeking anonymity and freedom from taxation.[10] These investors, whose financial resources are measured in billions of dollars, have until recently been responsive to the high-yielding dollar obligations of governments and major corporations.

Between September 1965 and February 1966, rates in the short-term Euro-dollar market advanced more than a full point. This development is significant since Euro-dollar funds have been used both by investors to purchase long-term foreign dollar bonds and by syndicate members to finance bond inventories. Tightening the Euro-dollar market has contributed to the sharp advancement of rates for dollar bonds, and has substantially impaired the attractiveness to corporate borrowers of straight debt issues.

[9] There are also some knotty conceptual problems in measuring external financial capacity which are beyond the scope of this paper. See Wilson E. Schmidt and Ira O. Scott, Jr., "Capital Exports and Capital Export Capacity: Some Notes on Measurement," *Finanzarchiv*, July, 1965.

[10] Nathaniel Samuels, "Perspectives on the New York Market: Capital Market Aspects," remarks before the National Industrial Conference Board, October 14, 1964.

As an illustration, a $25 million straight foreign dollar obligation of Phillips Petroleum was sold in January 1966 to yield 6.21 percent, 46 basis points above the offering yield of an almost identical Standard Oil (Amoco) issue of October 1965. In February 1966, American Standard abandoned its plan to issue straight debt, and New York bankers now invariably advise clients to use convertibles. (As Table 3 suggests, all the foreign issues of American companies now in preparation are convertibles.) Without question, the congestion in the foreign bond market is a product of the large number and volume of dollar bonds issued in Europe since October 1965, of which U. S. corporations alone floated $155 million in the public markets.

The existing squeeze will become more intense in the following months, as borrowers such as the Australians, Scandinavians, and probably Mexicans join U.S. corporations in attempting to satisfy their growing needs by tapping the national markets of Europe. Hoping to refund under more favorable conditions, numerous European and U.S. corporate borrowers have already been raising medium-term funds, 2- to 3-year maturities, in Switzerland, the Netherlands, Germany and in the medium-term Eurodollar market. There can be little doubt that both U.S. and foreign corporate borrowers—especially those whose names are not well known—will be denied access to the capital markets in Europe. Many of these firms will be compelled to postpone expansion plans until credit becomes more readily available.

V. *U. S. Policies and Their Implications*

Although the balance of payments deficits was reduced by $1.5 billion during 1965, the United States may not have solved its balance of payments problem. In substantial part, this saving resulted from one-shot reductions under the guidelines program in both bank loans to foreigners and American short-term dollar holdings abroad. But in the meantime, overseas outlays to finance the war in Viet Nam continue to increase, and neither the foreign aid program nor U. S. tourist spending abroad can reasonably be expected to fall. And with prices and spending rising at home and investment declining in Europe, it is difficult to foresee much improvement in the position on current account.

Having already embarked on a program to solve the balance of payments problem by restricting capital movements, the Administration may intensify these efforts still further. In point of fact, increasing restrictions would represent an extension of recent practices. To halt the dollar outflow a year after the enactment of the Interest Equalization Tax, it was considered necessary to regulate the foreign lending of commercial banks. Still later, the U. S. authorities requested a temporary moratorium on further Canadian borrowings. More recently, it was recognized that some overseas investors, especially Canadians, have been purchasing some of the new foreign obligations of American companies offered in Europe with the proceeds derived from the sale to Americans of previously issued U. S. corporate securities they had been holding in their portfolios. Since this portfolio switching defeats the purpose of the Interest Equalization Tax, the guidelines program was once more extended in December 1965 to include the U. S. branches of Canadian insurance companies. In the case of the convertible bonds of American corporations recently issued in Europe, it has been pointed out that Europeans or Canadians purchasing these bonds may exercise the conversion privileges when these become attractive. They can then sell the U. S. equities on the New York Stock Exchange and repatriate the funds. This possibility has led the authorities to request issuing corporations to design convertible bonds so that conversion is not permitted until after the

scheduled abolition of the Interest Equalization Tax in 1967. But if the tax is again extended, this procedure will then offer a loophole.

The process of restricting capital movements to correct the balance of payments deficit can reasonably be expected to continue because it appears to be more palatable politically than the alternatives of reducing aid, military expenditures, or the travel gap.

New financial instruments will undoubtedly emerge to attract non-U.S. funds as they have in the past; loopholes will be discovered; new regulations will be devised in the hope that they will improve the effectiveness of the program of restricting capital movements. The U. S. restriction, by contributing to increasing American and other foreign demands on the national markets in Europe, is likely to lead to further European restriction on capital exports too, thus driving the free world to still greater financial autarchy as well as limiting the European contribution on capital account in solving the U. S. balance of payments problem.

►PAUL S. ANDERSON

The Rise of Currency In Circulation During World War II

I. *Introduction*

Currency in circulation rose at an unprecedented rate during World War II, and by the end of the war the ratio of currency outside banks to Gross National Product had climbed to almost 13 percent, the highest level in recorded history.[1] There is substantial disagreement concerning the causes of this rise, the two most extensive analyses of the issue having been made by McDonald and Cagan.[2] McDonald attributed the currency expansion to military pay and the increase and redistribution of incomes brought on by the war. Cagan ascribed it largely to the evasion of income taxes. The findings of the present study are that the rise in currency outstanding was simply part of the sharp increase which occurred in private savings in all types of financial assets during the war.

II. *Military Pay and Income Redistribution*

McDonald points to three major fac-

Paul S. Anderson is a Financial Economist with the Federal Reserve Bank of Boston. The views expressed here are the author's own. **The extensive assistance of Mrs. Lee Smith in the statistical work is gratefully acknowledged.**

[1] U. S. Bureau of the Census, *Historical Statistics of the United States*, Washington, D.C.: 1960, Table F–1, p. 139, and Tables X–269, 277, pp. 646-647.

[2] Stephen L. McDonald, "Some Factors Affecting the Increased Relative Use of Currency Since 1939," *Journal of Finance*, September 1956, pp. 313-327; Philip Cagan, *The Demand for Currency Relative to the Total Money Supply*, National Bureau of Economic Research, Occasional Paper 62, 1958, (the main portion of this study was published in the *Journal of Political Economy*, August 1958, pp. 308-328).

tors as the causes of the wartime rise in currency holdings: "a rise in the relative importance of military wages and salaries, a regional, occupational and size redistribution of income, and a time lag in the readjustment of money-using habits to conform to new levels of income." [3] The evidence he presented to support these factors consisted, first, of a time-series correlation of the ratio of military salaries to total personal income with the ratio of personal holdings of currency to personal holdings of demand deposits. The coefficient of correlation for the 1939-53 period was .88. Next, the percentage increases in Federal Reserve Notes among Federal Reserve Districts were correlated with percentage increases in income payments among the Districts, with the coefficient of rank correlation of .82. Finally, evidence was presented that there was a somewhat greater rise in income among the lower income groups who are more likely to use currency, than the highest income groups who hold demand deposits to a relatively greater extent.

McDonald's evidence, however, does not effectively differentiate among competing explanations. The war had many effects on the economy, and currency use would probably correlate highly with a number of other variables, such as the Federal deficit, Federal expenditures, decline in purchases of consumer durables, black markets, etc. For example, the correlation coefficient between the annual rise in currency outside banks and the Federal deficit was .95 for the period from 1940 to 1946. Despite the high correlation, there is little reason why Federal deficits should cause currency holdings to rise.

A more relevant approach is suggested by McDonald's use of currency growth among Federal Reserve Districts, which was derived from the change in each Bank's Federal Reserve Notes outstanding with adjustments made for estimated interdistrict movements of Notes and for currency other than Federal Reserve Notes. This currency growth in each District can be correlated with a number of other variables available on a District basis, such as military pay, agricultural income, population structure, income per capita, etc.

The expansion in per capita currency outside banks from 1940-46 may be listed as follows (See Appendix for derivation of data):

Boston	$123	Chicago	$161
New York	246	St. Louis	94
Philadelphia	161	Minneapolis	79
Cleveland	119	Kansas City	92
Richmond	112	Dallas	59
Atlanta	102	San Francisco	164

It is notable that the growth in currency circulation was greater in the urban and industrial Districts of Boston, New York, Philadelphia, Cleveland, Chicago, and San Francisco, than in the other, more agricultural Districts. This suggests a correlation of some measure of urbanization with currency rises. The percentage of each District's 1940 population living in metropolitan areas exceeding 500,000 in population was taken as the urban variable, and its correlation with the District currency rises turned out to be very high, .96. This high correlation is, however, probably more of a hindrance than a help to analysis. While it does provide the location of the currency growth, it is obvious that any other variable which correlates highly with currency growth would also be highly correlated with the percentage of population in large cities. The difficulties arising from large-city and currency-growth association can be seen in Table 1, where the results of correlating currency rises among Districts with selected other District variables are presented.

In general, most variables that correlate highly with currency rises correlate

[3] *Op. cit.*, p. 326.

TABLE 1

Correlations of Selected Variables with World War II Currency Growth, by Federal Reserve District

Variables	Coefficients of Correlation (1)*	(2)†	(3)‡
Percentage of population in metropolitan areas of more than 500,000 people, 1940	.960	1.000	—
Level of currency outstanding, 1940	.925	.953	.120
Dollar growth per capita in savings and time deposits and savings bonds, 1940-46	.852	.924	−.328
Dollar growth per capita in savings and time deposits, 1940-46	.847	.926	−.400
Per capita personal income, 1943	.761	.869	−.529
Percentage foreign-born	.730	.847	−.561
Dollar growth in per capita income, 1940-46	.699	.743	−.075
Savings bond sales, 1940-46	.683	.751	−.207
Demand deposits held by individuals, 1946	−.043	−.058	.047
Military pay per capita, 1940-46	−.283	−.322	.098
Percentage of nonwhite population, 1940	−.342	−.466	.425
Percentage of agricultural to total income, 1943	−.702	−.775	.239

* Currency growth per capita with listed variable.

† Percentage of population in large SMSA's (of over 500,000 people) with listed variable.

‡ Partial correlation—same as column (1) but with percentage of population in large SMSA's held constant.

Sources: See Appendix.

even more highly with the large-city variable, leaving the partial coefficients negative, although none significantly so. (With 9 degrees of freedom, a coefficient of .60 is significant at the 5 percent level, while .52 is significant at the 10 percent level.) Conversely, those variables that correlated negatively with the currency rise correlated even more strongly negatively with the large-city population proportion, so that the partial coefficients were insignificantly positive.

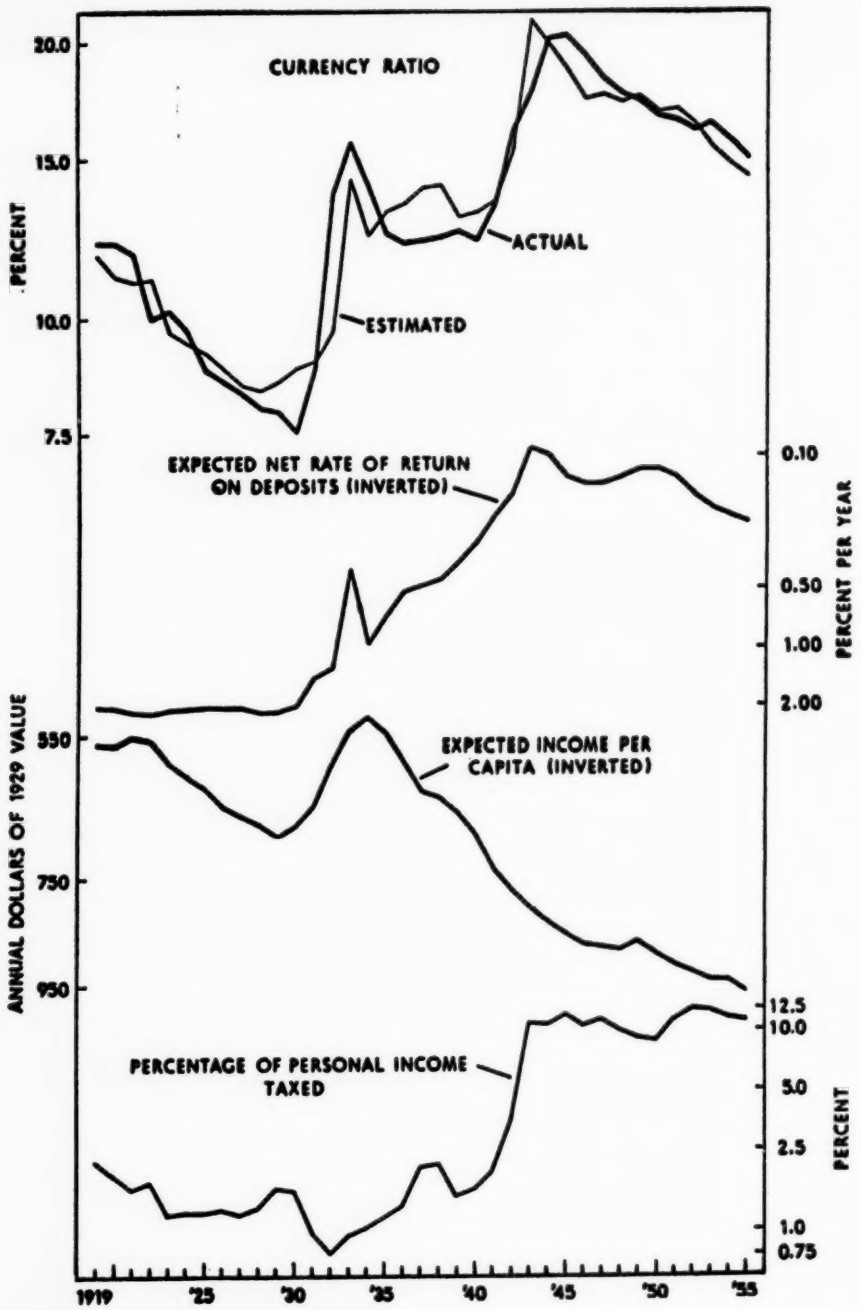
Some modest conclusions may be drawn from the table: (1) currency growth was heavily concentrated in large cities; (2) increases and holdings of other financial assets (except demand deposits) as well as income, were also heavily concentrated in large cities; (3) the large-city influence on currency holdings was evident before the war, in 1940, as well as during the war; and (4) military pay and demand-deposit holdings were uncorrelated with currency growth by Districts. Two variables—nonwhite population and the proportion of agricultural income—were not included in the conclusions because the direct and partial correlations were so conflicting. Conclusion (4), especially, does not support McDonald's contention that military pay and a relative shift of income toward currency users were factors in the currency rise.

III. *Evasion of Income Taxes*

Cagan's overall conclusions may be seen from his chart (reproduced on the following page) in which he illustrates the 1919-55 time patterns of the ratio of currency to the total money supply, and three explanatory variables—expected net interest paid on deposits, expected real income per capita, and the percentage of personal income taxed.[4] Five distinct short-term trends in the currency ratio are found: (1) a decline from 1919 to 1930; (2) a sharp rise from 1930 to 1933; (3) a decline from 1933 to 1941; (4) a sharp rise from 1941 to 1945; and (5) a decline from 1945 to 1955. The

[4] His regression equation was: $\log C/M = -0.21 \log X_1 - 1.16 \log X_2 + .22 \log X_3 +$ a constant, where C/M is the ratio of currency to the money supply, and X_1, expected net interest paid on deposits, X_2, expected real income per capita, and X_3, the percentage of personal income taxed; *op. cit.*, p. 21.

Chart



Cagan's determinants of the annual currency ratio 1919-1955. Ratio scales are adjusted by regression coefficients.

Source: Cagan, **op. cit.**, p. 19.

chief explanations advanced for these trends were: Expected income per capita for (1), (3), and (5); the rate of return on deposits plus income for (2); and the rate of return on deposits plus the percentage of personal income taxed for (4).

The income tax variable had a significant influence on the currency ratio used by Cagan only during World War II, but it was the most important influence accounting for the rise during that period. The weakness of this "proof" that pressure for evading taxes, as measured by the tax percentage, was the cause of the wartime currency expansion is that it rests almost entirely on a coincidence of movements during the one period. As noted earlier, many variables were appreciably affected by the war, and it is a doubtful analytical procedure to ascribe a rise in one variable to a rise in another unless adequate corroborating evidence can be obtained. Cagan's corroborating evidence consisted of a comparison of "excess" currency with estimated unreported income in 1945.[5] He considered the 1940 currency ratio "about normal," so the rise in the ratio by 1945, converted to an absolute level, yielded a volume of excess currency of about $12 billion. He took estimated unreported income in 1945 to be about $15 billion, resulting in an income velocity of this currency of just over 1.0 times a year. This, in his judgment, was probably close to the actual figure for currency velocity. This corroborating evidence does not appear to be very strong; at best, the magnitude of excess currency might be considered as being consistent with the magnitude of unreported income.

The interdistrict correlations between currency rises and other variables in Table 1 might yield some clues as to the probable impact of tax evasion on currency holdings, but because data on tax evasion by Districts are unavailable, the influence must be judged inferentially. There seem to be at least two clues that tend to refute the impact of tax evasion on currency growth. First, the wartime currency growth was heavily concentrated in large cities, while the largest percentage and dollar amounts of unreported income were evidently accounted for by farm entrepreneurs.[6] Second, the concentration of the wartime currency growth in large cities was not confined to wartime periods in which tax rates were raised; even in 1940, the distribution of currency was very highly correlated with the large-city variable—the coefficient was .95.

A more significant test of the causal relationship between currency and tax evasion is to correlate fluctuations in the two directly. While data on unreported income are not regularly compiled, several estimates of it have been made in recent years. Table 2 lists various measures of unreported income levels, obtained by comparing total personal income (as derived by the Department of Commerce) with reported gross income in personal income tax returns, with adjustments made for differences in coverage.[7]

It should be recognized that all unreported income is not necessarily the result of efforts to evade the payment of income taxes. At least a part simply reflects oversight and forgetfulness. Thus, total unreported income is an overstatement of intentional evasion and should be considered a proxy for such evasion.

Cagan, in his analysis, assumes that the desire to conceal transactions in order to avoid reporting them was the cause of the increase in currency circulation.[8]

[5] *Ibid.*, pp. 11-13.

[6] Selma F. Goldsmith, "Appraisal of Basic Data available for Constructing Income Size Distributions," *Studies in Income and Wealth*, Washington, D.C.: National Bureau of Economic Research, 1951, XIII, pp. 301-302.

[7] For a short description of these adjustments, see "The Tax Base for Individual Incomes," *Survey of Current Business*, May 1963, pp. 3, 18.

[8] *Op. cit.*, pp. 11-13.

Such abnormal use of currency, however, requires the overt collusion of the other parties to the transaction. Moreover, what would the prospective tax evader do with the cash he received? Tax authorities use net worth increases as well as estimated expenditures of suspected tax evaders as indications of unreported income.

A more likely prospect is that tax evaders will hoard currency received and not report this income. However, there is a difference in the effect on the level of currency in circulation if currency is hoarded rather than used in income-producing transactions. For example, if there were $5 billion of income being concealed each year by currency hoarding, each year there would have to be $5 billion added to hoards. But if this income were concealed by the use of, say, an extra $2.5 billion of currency in concealing income-producing transactions, there would be no necessity for a rise in extra currency after the initial year. Therefore, to test both the hoarding and the extra cash-transactions hypotheses of tax evasions, we must compare unreported income with both the growth and the level of excess currency outstanding.

In Table 2, data are presented for unreported income and excess currency. Two sources of unreported income data are shown for several years, but Kahn's series is used here for analysis since it covers the longest period. To obtain the level of excess currency, it was assumed that 4 percent of Gross National Product, approximately the average ratio for the 1920's, was normal. Amounts exceeding 4 percent were then considered excess.

Inspection of the comparative levels of unreported income and the two measures of excess currency shows that there is no similarity in movement between unreported income and excess currency. Unreported income has been quite stable over time, but with a slow growth trend. Excess currency has fluctuated a great deal more, but it has had a declining trend since the war. The coefficient of correlation between Kahn's unreported income series and excess currency from

TABLE 2

Unreported Personal Income and Excess Currency in Circulation 1944-1964

(In billions of dollars)

Year	Estimated unreported personal income		Excess currency	
	Kahn series	Alternate series	Level	Increment
1944		18.3	12.8	4.1
1945	18.1	18.5	16.5	3.7
1946	20.2	20.1	18.2	1.7
1947	19.6		17.2	−1.0
1948	19.6		15.9	−1.3
1949	22.8	21.5	15.5	−0.4
1950	21.6		14.0	−1.5
1951	23.3		12.6	−1.4
1952	24.4	24.6	13.0	0.4
1953	25.3		13.2	0.2
1954	24.1		13.5	0.3
1955	24.9		12.2	−1.3
1956	26.6		11.5	−0.7
1957	26.2		10.7	−0.8
1958	29.3		10.7	.0
1959	29.8		9.7	−1.0
1960	31.8	30.0	9.3	−0.4
1961	30.5		9.1	−0.2
1964			9.1	0.5

Sources: Estimated unreported personal income: Kahn Series—a new series supplied by C. Harry Kahn; for a general description see his **Personal Deductions in the Federal Income Tax**, Princeton: Princeton University Press, 1960, especially Table A-2, pp. 194-195; Alternate Series—1944-46—Selma F. Goldsmith, "Appraisal of Basic Data Available for Constructing Income Size Distributions," **Studies in Income and Wealth**, Vol. 13, National Bureau of Economic Research, 1951, Table 8, p. 302; 1949—Joseph A. Pechman, "Comment" (on 1949 Audit Control Program), **Studies in Income and Wealth**, Vol. 23, Table 3, p. 277; 1952—Daniel C. Holland and C. Harry Kahn, "Comparison of Personal and Taxable Income," **Federal Tax Policy for Economic Growth and Stability** (U. S. Congress, Joint Economic Committee Print, 1955), Table 4, p. 320; 1960—"Tax Base for Individual Incomes," **Survey of Current Business**, May 1963, Table II, p. 3, with an estimated $3.4 billion subtracted from "nonreported gross income" to take account of income below filing requirement.

Excess currency: Derived from data in the **Federal Reserve Bulletin**; 4 percent of GNP is assumed to be the normal level of currency outside banks; this is subtracted from the actual average outstanding based on December 31 data to obtain levels of excess currency.

1944 to 1961 (the alternate series was used for 1944) was −.87 where excess currency was measured by level, and −.44 where the growth increment was used.

The comparison between annual levels of unreported income and currency strongly suggests that the two magnitudes are not causally related. This lack of correlation does not necessarily prove, however, that no currency is hoarded in order to conceal the receipt of income. But the magnitudes involved apparently are not large enough to affect overall currency levels measurably.

IV. *Planned and Unplanned Saving*

It is easier to refute a hypothesis about the determinants of the wartime currency rise than to uncover a valid one. The chief difficulty is that little is known about currency holdings of individuals. Surveys made of holdings of money and other financial assets of households always result in underreporting, for people tend to underestimate their dollar holdings of financial assets when they rely solely on memory. In addition, many are suspicious of financial surveys, and consequently are reluctant to give information on "money in the bureau drawer," especially if the amounts tucked away are substantial.[9]

One clue to the wartime currency rise is the large magnitude of that rise—$18 billion, quadruple the 1940 currency level. While black market sales probably absorbed some additional currency, it is inconceivable that such sales were large enough to produce even a 10 percent rise in currency outstanding. Judging from the amount of currency received and shipped out by the Federal Reserve banks, actual currency use doubled from 1940-45, which is a smaller rate of growth than that of GNP for those years.[10]

If the medium of payments function cannot account for the excessive wartime currency growth, perhaps the store of value function—which is evidenced by saving or hoarding—can. The interdistrict correlation of currency growth shown in Table 1 is certainly not inconsistent with a savings explanation. Both savings deposit growth and savings bond sales were highly correlated with currency growth. Even stronger evidence of the close correspondence between saving in the form of financial assets and currency growth is provided by a comparison of the annual increments of "excess" currency and of liquid savings assets. Table 3 shows a comparison of excess currency growth with Goldsmith's estimates of the flow of annual saving into financial savings assets other than currency—deposits and savings shares in banks, savings associations, and credit unions; life insurance reserves; and mortgages and securities, including U.S. savings bonds. Goldsmith also presents a table showing the annual savings flow going into these forms as a percentage of personal disposable income; for the period from 1897 to 1945, this savings flow averaged 9.3 percent of disposable income.[11] This figure was rounded to 9 percent to represent a roughly "normal" rate of saving in these forms.

There is a suggestive correspondence between the bulges in excess currency and those in the forms of financial savings assets that do not conceal the receipt

[9] An interesting illustration of this distrust of surveys involves a survey of savings depositors made in Hartford by the Social Science Research Council. Some depositors denied holding any savings deposits, even though the survey teams had previously determined from bank records that such deposits were in fact held.

[10] Currency-handled data are available in each *Annual Report* of the Board of Governors of the Federal Reserve System.

[11] R. A. Goldsmith, *A Study of Saving in the United States*, Vol. I, Princeton, N. J.: Princeton University Press, 1955, Table S–50, p. 321.

TABLE 3

Personal Saving Going Into Financial Claims and Growth in Excess Currency 1940-1949

(In billions of dollars)

Savings flow into financial claims			
Year	Actual	Excess over "normal"	Growth in excess currency
1940	4.4	−2.4	0.5
1941	8.3	0.1	0.3
1942	19.9	9.5	2.3
1943	29.2	17.4	3.2
1944	34.2	21.1	3.9
1945	32.5	19.1	3.8
1946	15.2	1.2	1.7
1947	12.6	−2.3	−0.9
1948	9.4	−7.1	−1.4
1949	10.3	−6.1	−0.4

Sources: Savings Flow—Raymond A. Goldsmith, A Study of Saving in the United States, Vol. I, Princeton: Princeton University Press 1955, Table T-6, 353-354; includes all financial forms except currency and pensions (columns 9-21, except columns 15-17). The excess is the difference between the actual and 9 percent of personal disposable income. The 9 percent figure is approximately the average ratio of annual savings in these forms to disposable income, Ibid., Table S-50, p. 321.

Growth in excess currency—Federal Reserve Bulletin, various years.

of income.[12] The increments over "normal" in both financial savings flows and currency started to grow rapidly in 1942, reached peaks in 1944, and began a decline in 1947. For the years 1940-49, the coefficient of correlation between "excess" saving in financial claims and growth in "excess" currency was +.97.

If it is assumed that saving was the major factor in the wartime currency rise, there still remains the problem of why certain savers used currency rather than the other financial forms, most of which earned interest. According to surveys, 22 percent of households, mostly in the low-income range, hold no liquid assets other than currency.[13] These households probably save currency in lieu of other liquid assets.

In addition to the regular currency savers, other households which normally did not save in liquid assets may have accumulated largely unplanned stocks of currency during the war when incomes rose rapidly while almost all consumer durables were unavailable. With the ending of the war, persons in this group would have been expected to revert to their normal pattern of either not saving at all, or saving only in nonfinancial, or real, forms. Their use of accumulated cash hoards for consumption or real investment in the postwar period may be the explanation for the gradual decline of "excess" currency, as shown in Table 2. The savings explanation of the large rise of currency in circulation during World War II appears to be fortified by the changes which took place during the period in the average denomination of currency outstanding, which rose continually during World War II, but declined thereafter.[14] If savings were in the form of currency there would have been a greater demand for the larger denominations. Conversely, the apparent decline in currency saving since the war would account for the fall in size of the average denomination. This savings explanation of average denomination size seems more convincing than that advanced by Klein, who hypothesized that the rise in average denomination up to 1945 corresponded to the rise in prices. However, this correspondence did not continue after the war when prices continued to rise while average denomination size fell.[15]

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[12] McDonald presented practically this same idea when he hypothesized that the currency rise resulted from the rapid rise in personal income which led to an unplanned accumulation of currency, *op. cit.*, pp. 325-326. But he did not explicitly associate the currency rise with the record rise in private savings.

[13] Dorothy S. Projector, "Survey of Financial Characteristics of Consumers," *Federal Reserve Bulletin*, March 1964, p. 292.

[14] John J. Klein, "Price-Level and Money-Denomination Movements," *Journal of Political Economy*, LXVIII, August 1960, 371-372.

[15] *Ibid.*, pp. 372-374.

Appendix

SOURCES AND DERIVATION OF DATA

Currency outside banks in each Federal Reserve District. Federal Reserve Note liabilities of each Federal Reserve Bank were used as the base for estimating currency in each District. These amounts were increased by the ratio of total currency to total F. R. Notes. Vault cash held by banks in each District was excluded. To adjust for interdistrict movements of currency, the net addition or deduction for each District was estimated by first taking the difference between "foreign" Notes received annually by each Bank and each Bank's Notes received annually by other Districts. This difference as a percentage of total currency received annually by each Bank was then used as the adjustment factor. By District, in numerical order, this factor was as follows for the wartime increase: –2, 0, 0, –3, –2, 6, 0, 3, 0, –1, 2, 0.

Personal income of each Federal Reserve District. Personal income data by states were obtained from U.S. Department of Commerce, *Personal Income by States.* This source also lists source of income. Population was used to allocate income (and other series) of states split between two Federal Reserve Districts. Because allocation proved tedious, only the 1943 income values were used in the case of total personal income and percentage of agricultural income. It was felt that expanding coverage to 1940-46 would not change the results appreciably.

Other data. Savings bond sales annually by states are presented in the *Treasury Bulletin.* Population data, i.e. percentage of foreign-born, nonwhite, and in large S.M.S.A.'s, was taken from the *Statistical Abstract.* Demand deposits of individuals for 1946, the earliest year available, were obtained from each District's *Monthly Review.*

► FRANK C. JEN and JAMES E. WERT

The Value of the Deferred Call Privilege

I. Background

This paper is concerned with the deferred call privilege, that is, the right of the borrower to pay off an obligation prior to its maturity if payment is deferred for a period after the issuance of the security. After a brief introduction to the topic, there follows a review of the position taken by the regulatory agencies and the main conclusions reached by Hess and Winn, who have written the most comprehensive study in this area.[1] Alternative hypotheses are then presented and tested by an analysis of utility bonds offered in 1960-64, and by observing the pattern of mean yield differences and mean coupon rates by quarters from 1960-64.[2]

It is well known that nearly all corporate bonds provide call privileges for the issuer. In some cases, the call is exercisable immediately, in others it is deferred for a period after the issuance. This study concentrates on deferred call privileges in corporate bonds, but the same feature is present in other debt

Frank C. Jen is Assistant Professor of Finance and Management Science at the State University of New York at Buffalo, where James E. Wert is Manufacturers and Traders Trust Company Professor of Finance.

[1] A. Hess and W. Winn, *The Value of the Call Privilege*, Philadelphia, Pa.: The University of Pennsylvania Press, 1962.

[2] A substantial portion of Hess and Winn's data is also reexamined.

instruments such as U. S. government bonds.

It was the view of Federal regulatory agencies during the late 1950's that a deferred call feature did not have an effect on issuing yields. Specifically, the Securities and Exchange Commission, the Federal Power Commission, and the Interstate Commerce Commission concluded that offering yields on issues that were immediately callable and on those having a deferred call were identical.[3] An example of this position was included in a formal opinion by the Federal Power Commission when Puget Sound Power and Light Company requested a 5-year noncallable feature in a proposed $20 million bond issue:

> However stated, Applicant will have to pay the currently prevailing hire or cost of money for securities of the type and character which it proposes to issue. We see no difference in setting forth that cost as a stated interest rate or in part as a stated interest rate and in part as a penalty against redemption. And in any event, our experience to date has not shown a material difference in the cost of money, on a current basis, of comparable security issues with a limitation on the right of redemption and those without. Rather, the difference if any, is reflected, we believe in the whole period during which a borrower may not redeem a given issuance.[4]

In their book, *The Value of the Call Privilege,* Hess and Winn agree generally with the position of these regulatory authorities. Their conclusion can be summarized by two propositions: (1) Investors did not establish a perceptible value on the deferred call privilege during the period 1926-59, except during the second half of 1959;[5] (2) Theoretically speaking, investors should have placed a value on the deferred call privilege during the entire period.[6] The first proposition was founded on the general pattern of offering yields of nearly 1,250 issues of deferred and nondeferred or freely callable bonds. Further evidence is also provided by a comparison, for the period 1956-59, of the offering yield of a deferred issue with that of a comparable nondeferred issue on a bond-by-bond basis. The second proposition was developed through the use of a mathematical model from which Hess and Winn found that a deferred call privilege is always a valuable right to the investor.[7]

Although we agree with Hess and Winn that the data on bonds for the period 1926-55 seem insufficient to warrant a definite conclusion for the period, the first proposition appears correct.[8] The second proposition, however, is questionable, since Hess and Winn appear to have overestimated the theoretical value of a deferred call privilege for the period from 1926 to the first half of 1959.[9]

Generally speaking, investors should place a value on a deferred call privilege only when their expectations of future interest rates are such that the bond would possibly be called within the period of deferment for refunding purposes.[10]

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[3] See Hess and Winn, *op. cit.*, pp. 26-31.

[4] Federal Power Commission, Docket No. E-6753, June 19, 1957, as quoted in *Ibid.*, p. 29.

[5] *Ibid.*, pp. 80-82.

[6] Hess and Winn did not say what the size of the theoretical value should be, although they asserted "Certainly at present yield differences attributable to call provisions are considerably less than they theoretically should be." See *Ibid.*, p. 82.

[7] *Ibid.*, pp. 32-82.

[8] *Ibid.*, pp. 34, 39.

[9] The main reason for the overestimation appears to be the use of an improper subjective probability distribution of future interest rates and an unrealistic assumption of the strategy of the issuer in refunding.

[10] Investors are assumed to be concerned only with bonds being refunded at a period in which the interest rate is lower than the coupon rate. The assumption is realistic, since most of the bonds under analysis are deferred for refunding purposes only.

Such an expectation is not justified when the interest rate in the period of deferment is expected to be higher than, or equal to, the coupon rate of the bond. It is also unjustified when the interest rate in the period of deferment is expected to be lower than the coupon rate but not sufficiently lower for the issuer to refund the bond profitably. Indeed, investors should pay for a deferred call privilege only when the interest rate in the period of deferment is expected to drop to such a level that the present value of the interest to be saved by the issuer through refunding will be greater than both the call premium and the refunding expenses to be incurred by the issuer.

Even when investors expect the interest rate to drop to a level profitable for the issuer to call within the period of deferment, the value to be placed by investors on the privilege should be no greater than the present value of the additional interest that can be earned for the remainder of the deferred period, if investors expect the interest rate to remain low beyond the deferred period.[11] Under such an expectation, investors should expect the issuer to call the bond as soon as the period of deferment expires. If, however, investors expect the interest rate to recover before the expiration of the deferred period and decline again to a level that will be profitable for the issuer to call, the value to be placed by the investors on the privilege should then be no greater than the present value of the additional interest that can be earned during the intervening period. In both cases, however, the value is not expected to be very high, provided that the period of deferment is short—say, no more than five years.

Assuming a "customary schedule of call premium"[12] and issuer's refunding expenses of 1½ percent of the principal sum of the issue,[13] investors have to expect the interest rate to drop to a level more than 10 percent lower than the coupon rate within the deferred period before they should be willing to pay for a deferred call privilege.[14] Since the period of deferment is generally set at five years,[15] and since the long-term interest rate generally drops slowly over time even in a period of declining interest rates,[16] investors should therefore pay for

[11] It is also true that if investors expect the interest rate to decline to such a low level after the expiration of the deferred period that the issuer will not exercise its right to call during the period of deferment, the deferred call privilege should carry no value.

Incidentally, it is theoretically possible, though improbable, for the yield of a deferred issue to be higher than that of a nondeferred issue. The case is considered, however, as having little practical importance.

[12] A customary schedule of call premium for refunding purposes provides that the call premium equals one year of interest initially and drops annually by equal sums to zero upon maturity of the bond.

[13] For bonds with a principal sum of from $10 to $50 million, the average flotation expense is about 1½ percent of the principal sum. See: *Cost of Flotation of Corporate Securities 1951-55*, Securities and Exchange Commission, Washington, D. C.: U. S. Government Printing Office, 1955, pp. 38, 64, 66.

[14] It is difficult to derive this estimate rigorously through mathematics because the resulting general equation is an n-th degree polynomial. Sufficient calculations convince the authors, however, that the statement holds true for bonds maturing between, say, 15 and 40 years.

[15] This statement holds true only for bonds issued in the period 1956-64, which is the period under intensive study by Hess and Winn and this paper.

[16] From 1926 to 1959, the average annual yield of newly issued corporate bonds declined by 1 percent or more within a 5-year period only three times. All these steep declines occurred during the depth of depression. See Hess and Winn, *op. cit.*, Table 1, p. 10.

It can, of course, be argued that change of long-term yield measured from the cyclical peak to the cyclical trough may be quite sharp even if the *average* annual yield seldom declined by 1 percent or more within a 5-year period. However, so long as investors expect such cyclical phenomena to recur frequently the value of a

the deferred call privilege only when the coupon rate of the bond is quite high relative to the interest rate investors expect in the period of deferment.

If the contention in the preceding paragraph is correct, investors will insist on the same yield for bonds with a deferred call privilege as on that for bonds otherwise comparable but with a nondeferred call privilege, whenever the coupon rate is low relative to the expected interest rate. Moreover, whenever the coupon rate is quite high relative to the expected interest rate, investors will accept for bonds with a deferred call privilege a yield lower than that for bonds otherwise comparable but with a nondeferred call privilege. Finally, whenever the coupon rate is quite high, the higher the coupon rate is, the greater is the difference in yield that investors will accept for a bond with a deferred call privilege.

II. The Empirical Tests

To test whether the yield patterns of the market are consistent with the preceding contentions, data such as coupon rate offering yields were collected for all utility issues offered in 1960-64 meeting the following criteria:[17]

(1) issues of $5 million or larger;
(2) issues that were publicly offered;
(3) a rating by Moody's at the time of offering of A, Aa, or Aaa;
(4) no warrant or conversion privileges —all were term rather than serial issues;
(5) a schedule of call premiums not very different from the customary call schedule.[18]

These criteria were adopted in order to insure that the effects on offering yields of such extraneous factors as size, marketability, convertibility, and call premium were either eliminated or reduced to a minimum.

From these data, the offering yield of a deferred issue was compared on a pair basis with that of a nondeferred one, using bonds of the same rating offered within a 2-week period.[19] Comparisons of 74 pairs were thus formed out of 371 bonds examined.[20] A yield difference was then computed for each comparison, representing the difference in offering yields between the deferred and the freely callable issues. Because of the selection criteria and the pairing procedure, the observed difference in offering yields can be interpreted as the sum of a true yield difference due to a difference in call provisions and a yield difference randomly distributed with zero mean due to a difference in the extraneous factors.[21] Therefore, provided that the investor's expected interest rate within the deferred period for bonds offered in 1960-64 is stable,[22]

5-year deferred call privilege should still not be too high because investors should expect the deferred issue to be refunded near the second trough if not the first.

[17] The source of the data is *Moody's Bond Guide*, January, 1960-December, 1964.

[18] The criteria used here follow those used by Hess and Winn, *op. cit.*, pp. 32, 46.

[19] The pairing procedure used here follows broadly that of Hess and Winn, *op. cit.*, pp. 51-82. A 2-week period is selected in order to allow enough comparisons to be formed without introducing too much variation in the basic yield of these bonds.

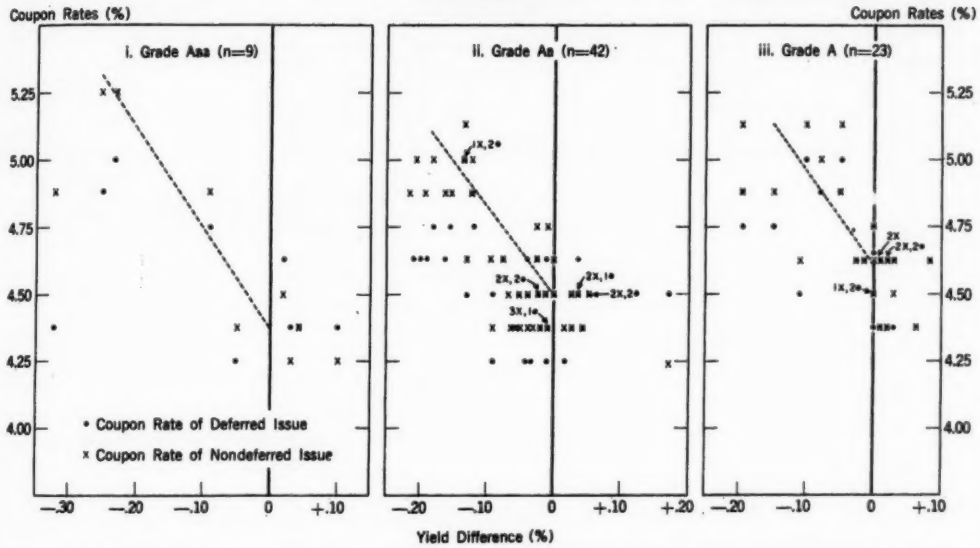
[20] A list of all the comparisons is attached to this paper as an Appendix.

[21] So long as no systematic difference other than call provision exists between two issues that form a pair, the yield difference due to difference in the extraneous factors can be regarded as randomly distributed with zero mean. A systematic difference in coupon rates between the two issues, however, is observed. The effect of such systematic difference on yield difference is discussed in Section III below.

[22] This assumption implies that investors' expected interest rate for the deferred period is independent of the current yield. This assump-

Figure 1

Yield Difference by Coupon Rates of Both Deferred and Nondeferred Issues 1960-1964



the yield differences *on the average* would be around zero when the coupon rates of the issues under analysis are low, and negative when the coupon rates are high.[23] Moreover, when the coupon rates are high, the absolute value of the difference in offering yields would, *on the average*, be greater for bonds carrying higher coupon rates.

Figure 1 presents the yield difference classified by coupon rate of both deferred and nondeferred issues for all three grades of bonds. The straight lines,[24] drawn freehand, indicate the line of average relationship between the yield difference and the coupon rate of the nondeferred issue. The evidence clearly supports the hypothesis that on the average the yield difference will be around zero when the coupon rates are low, and negative when the coupon rates are high. Indeed, the line of average relationship suggests that the coupon rates, where the yield difference equals zero, are approximately 4.375, 4.50, and 4.625 percent, respectively, for issues of grades Aaa, Aa, and A.[25]

tion leads to our main hypothesis that, on the average, yield differences exist only when coupon rates are high.

Another assumption consistent with our hypothesis is that investors' expected interest rate for the deferred period rises and falls with the level of yield, but not as fast. Because yield level correlates closely with the coupon rate, yield difference should, on the average, still appear only when coupon rates are high.

Note that if investors really do not pay for the deferred call privilege, yield difference should, on the average, be zero irrespective of the level of coupon rates and the investor's expected interest rates.

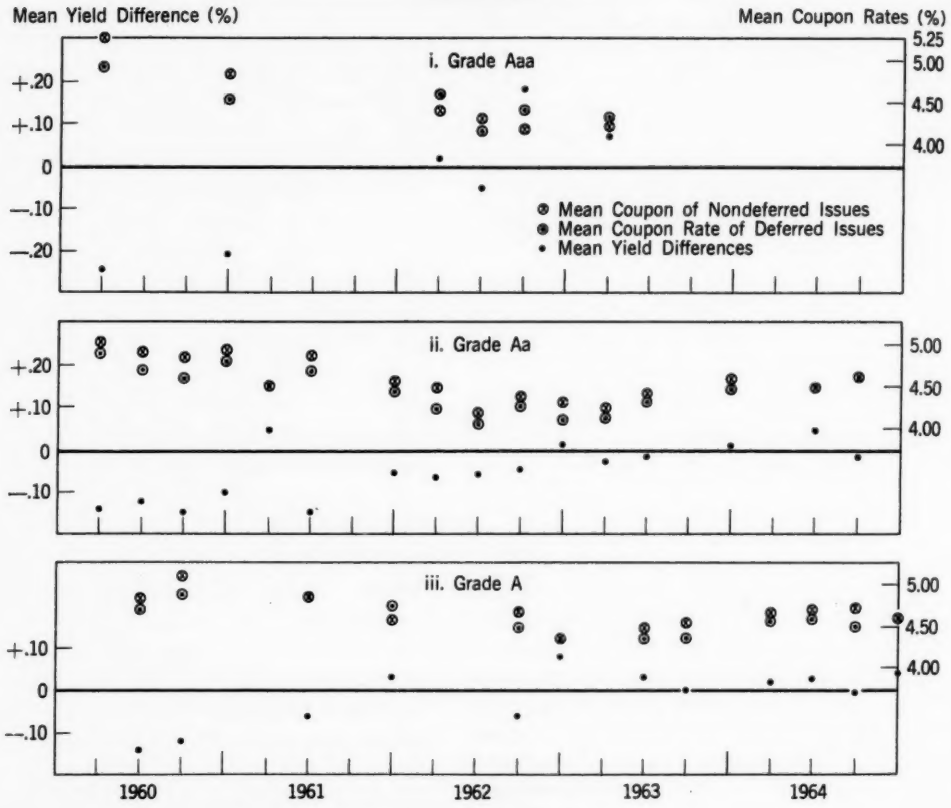
[23] That is, the yield of deferred issues is on the average lower than that of comparable freely callable issues.

[24] The straight lines are drawn purely as a matter of convenience in exposition. It is difficult to estimate what the theoretical functional form should be.

[25] A similar analysis was carried out on Hess and Winn's comparisons for 1956-59 (See: Hess and Winn, *op. cit.*, pp. 47-81.) The result also supports the hypothesis. However, the coupon rates where the yield difference equals zero are approximately 5 percent and 5.25 percent for

Figure 2

Mean Yield Difference and Mean Coupon Rates by Quarters 1960-1964



Note: ⊛ and ⊛ are read on the right scale. • is read on the left scale.

As another test for the hypothesis, the mean coupon rates and mean yield differences for all comparisons and grades for every quarter in the period 1960-64 were computed. Because long-term interest rates adjust to a new level gradually, the mean yield difference would be increasing slowly toward zero when the coupon rates of the nondeferred and deferred issues were gradually declining from the high yield level of 1960 to the average yield level of 1964. Figure 2 shows the mean coupon rates and mean yield differences, both classified by quarters. The pattern again supports the hypothesis.

III. Possible Bias

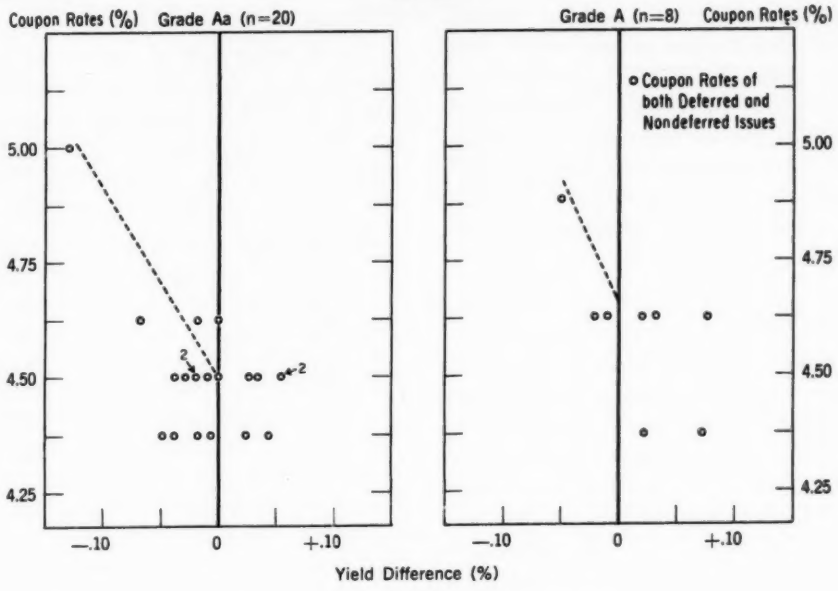
Despite the supporting evidence presented, it can be argued that a systematic difference other than call provision may exist between the issues that form a pair, so that the assumption that yield difference due to extraneous factors is randomly distributed with zero mean is

grades Aa and A respectively. (Grade Aaa has too few observations in that period.)

Note that the yield difference appeared at a higher coupon rate in 1956-59 than in 1960-64. This can be attributed to downward revisions of investor's expected interest rate due to: (1) government policy of holding long-term rates low to stimulate economic growth; and (2) many nondeferred issues with high coupon rates offered in 1957 being called in 1958.

Figure 3

Yield Differences by Coupon Rates
(When the Coupon Rates of Deferred and Nondeferred Issues are the Same)
1960-1964



Note: Only one comparison of Aaa is available. The coupon rate for that comparison is 4.375 percent and the yield difference is +0.04 percent.

unrealistic. To check this possibility, the size, maturity, and coupons of the paired issues were compared. No systematic difference was observed except in the case of coupon rates.[26] In the latter case, coupon rates of the deferred issues were found to be consistently lower than coupon rates of the nondeferred ones when yields of the deferred issues were lower than yields of the nondeferred ones. One can postulate that yields will be higher for bonds with higher coupons, because investors demand higher yields on the latter to protect against possible calls. The differences in yields revealed in the pairs can then be attributed to the systematic differences in coupon rates of the two issues that form the pairs, rather than to the level of coupon rates relative to that of the expected interest rates.

Although this line of reasoning is generally valid, coupon rates of deferred issues are generally higher than those of nondeferred ones when the yields of the deferred issues are higher. Thus, it appears reasonable to conclude that coupon rates are designed to suit yields, rather than vice versa.[27] The average yield difference, moreover, appears too large to be attributable to difference in coupon

[26] Note that because of the selection criteria, any systematic bias in yield difference due to systematic difference in these and other unchecked extraneous factors can be regarded as very small, even if systematic difference does exist.

[27] If the proposition that coupons are designed to suit yields is accepted, our hypothesis on the relationships between coupon rate and yield difference should apply equally to the level of yield and yield difference. Thus, a reasonable hypothesis is: If the investors' expected interest rate within the deferred period for bonds offered in 1960-64 was stable, the yield differences would be around zero when the level of yield is low and negative when the level of yield was high.

rates alone. Furthermore, an analysis of all pairs having the same coupon rates (Figure 3) results in a line of average relationship also in favor of the hypothesis that the yield difference will be around zero when the coupon rates are low, and negative when the coupon rates are high. Thus, it appears that, while there may be some small yield differences due to difference in coupon rates, the average yield difference in Figure 1 can still be primarily attributed to difference in call provisions.

IV. Conclusion

By examining the pattern of yields associated with the deferred and the freely callable issues for the period 1926-59, and by comparing on a bond-by-bond basis the offering yield of a deferred issue with that of a comparable nondeferred issue for the period 1956-59, Hess and Winn concluded that except during the second half of 1959, investors did not place a value on the deferred call privilege in 1926-59. On the basis of a mathematical model, they further concluded that investors should theoretically have paid for a deferred call privilege in the entire period, even though the market did not reflect such values.

Hess and Winn's first conclusion appears correct. We contend, however, that their second conclusion—that investors should theoretically have paid for a deferred call privilege during the entire period—is questionable, since investors would not have placed a value on such a privilege unless the coupon rate of an issue was high relative to the expected interest rate in the deferred period. We further contend that when the coupon rate is high, investors would place a higher value on such a privilege for bonds with higher coupon rates.

These contentions were tested by analyzing the offering yields of the new utility bonds for the period 1960-64, and also by analyzing the pattern of mean coupon rates and mean yield difference for every quarter during that period. The evidence supports our contentions.

The possible bias of the result due to the existence of systematic differences in factors other than call provisions between two issues that form a pair was also examined, but was not considered important enough to alter our conclusions.

As has been pointed out elsewhere in this paper, the hypotheses and the collaborating evidence herein presented suggest that even for a deferred period as short as five years, investors sometimes are willing to accept lower yields for issues carrying deferred call privileges. Investors can, therefore, be expected to accept a lower yield more often if the period of deferment is made longer by the issuer. If this deduction is correct, one can rightfully wonder why investment bankers and issuers do not experiment with a greater variety of call features, including the possible offering of noncallable bonds like those of the U. S. government.[28]

After all, since investors do value the deferred call privilege when they expect the interest rate to decline within the period of deferment, and since the long-term expectations of interest rates are frequently quite diverse among the investors and issuers, the offering of a greater variety of bonds can allow the judgment of both investors and issuers to be brought into play in arriving at the proper interest rates, and thus enable a more efficient allocation of capital in the society.

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[28] We venture to suggest that a substantial portion of the observed yield difference between the taxable Governments and the Aaa's is due to the fact that the former are either noncallable or the call privilege is deferred for a long time.

Appendix

List of Comparisons Used in this Study

Number*	Grade	Type of Deferment	Coupon Rate (%)		Yield (%)		Yield Diff. %
			Deferred Issue	Nondeferred Issue	Deferred Issue	Nondeferred Issue	
60–1	Aaa	R–5†	5.00	5.25	4.95	5.19	−0.24
60–2	Aaa	R–5	4.875	5.25	4.94	5.19	−0.25
60–3	Aa	R–5	5.00	5.125	4.95	5.08	−0.13
60–4	Aa	R–5	4.75	4.875	4.70	4.85	−0.15
60–5	Aa	R–5	4.75	4.875	4.70	4.82	−0.12
60–6	A	R–5	4.875	5.00	4.80	4.875	−0.075
60–7	Aa	R–5	4.625	5.00	4.65	4.84	−0.19
60–8	A	R–5	4.75	4.875	4.60	4.80	−0.20
60–9	A	R–5	4.75	4.875	4.65	4.80	−0.15
60–10	Aa	R–5	4.625	4.75	4.55	4.65	−0.10
60–11	Aa	R–5	4.625	4.75	4.625	4.65	−0.025
60–12	A	R–5	5.00	5.125	5.00	5.25	−0.25
60–13	A	R–5	5.00	5.125	4.95	5.05	−0.10
60–14	Aaa	C–5‡	4.75	4.875	4.65	4.74	−0.09
60–15	Aa	R–5	4.625	4.875	4.675	4.78	−0.105
60–16	Aaa	R–7½	4.40	4.875	4.40	4.72	−0.32
60–17	A	R–5	4.875	5.125	4.85	5.05	−0.20
60–18	Aa	R–5	5.00	5.00	4.87	5.00	−0.13
61–19	Aa	R–5	4.50	4.50	4.42	4.37	+0.05
61–20	Aa	C–5	4.625	4.815	4.57	4.75	−0.18
61–21	A	R–5	4.875	4.875	4.80	4.85	−0.05
61–22	Aa	R–5	4.625	4.875	4.60	4.80	−0.20
61–23	Aa	R–5	4.625	4.625	4.50	4.57	−0.07
61–24	Aa	R–5	4.875	5.00	4.75	4.87	−0.12
61–25	Aa	R–5	4.75	5.00	4.70	4.87	−0.17
61–26	A	R–5	4.75	4.625	4.57	4.55	+0.02
61–27	Aa	R–5	4.50	4.625	4.44	4.52	−0.08
61–28	Aa	R–5	4.50	4.50	4.43	4.47	−0.04
61–29	Aa	C–5	4.50	4.50	4.44	4.47	−0.03
62–30	Aaa	C–5	4.625	4.50	4.52	4.50	+0.02
62–31	Aa	R–5	4.375	4.50	4.375	4.43	−0.055
62–32	Aa	R–5	4.375	4.375	4.23	4.28	−0.05
62–33	Aa	R–5	4.25	4.375	4.20	4.28	−0.08
62–34	Aa	R–5	4.375	4.375	4.26	4.28	−0.02
62–35	Aaa	R–5	4.25	4.375	4.18	4.23	−0.05
62–36	Aa	R–5	4.50	4.50	4.43	4.40	+0.03
62–37	A	R–5	4.50	4.625	4.45	4.56	−0.11
62–38	Aa	C–5	4.50	4.25	4.45	4.27	+0.18
62–39	Aa	C–5	4.375	4.375	4.27	4.33	−0.06
62–40	Aa	R–5	4.25	4.375	4.25	4.26	−0.01
62–41	Aa	R–5	4.375	4.375	4.33	4.29	+0.04
62–42	Aa	R–5	4.25	4.375	4.23	4.22	+0.01
62–43	Aa	R–5	4.50	4.625	4.43	4.56	−0.13
62–44	Aa	R–5	4.50	4.50	4.425	4.40	+0.025
62–45	A	R–5	4.375	4.375	4.42	4.35	+0.07
63–46	Aa	R–5	4.50	4.50	4.42	4.43	−0.01
63–47	Aa	R–5	4.625	4.50	4.50	4.47	+0.03
63–48	Aaa	C–5	4.375	4.25	4.22	4.19	+0.03
63–49	Aaa	C–5	4.375	4.25	4.29	4.19	+0.10
63–50	Aaa	C–5	4.375	4.375	4.27	4.23	+0.04
63–51	Aa	R–5	4.25	4.375	4.25	4.26	−0.01
63–52	Aa	R–5	4.25	4.375	4.235	4.26	−0.025

(Continued)

List of Comparisons Used in this Study

Number*	Grade	Type of Deferment	Coupon Rate (%)		Yield (%)		Yield Diff. %
			Deferred Issue	Nondeferred Issue	Deferred Issue	Nondeferred Issue	
63–53	Aa	R–5	4.25	4.375	4.29	4.32	−0.03
63–54	Aa	R–5	4.50	4.50	4.37	4.39	−0.02
63–55	Aa	R–5	4.50	4.50	4.37	4.39	−0.02
63–56	A	R–5	4.375	4.50	4.45	4.42	+0.03
63–57	A	R–5	4.375	4.375	4.39	4.37	+0.02
63–58	Aa	R–5	4.375	4.375	4.33	4.34	−0.01
63–59	A	R–5	4.40	4.375	4.40	4.39	+0.01
63–60	Aa	R–5	4.375	4.375	4.32	4.30	+0.02
63–61	A	R–5	4.375	4.50	4.40	4.40	0
64–62	A	R–5	4.50	4.625	4.50	4.50	0
64–63	A	R–5	4.60	4.60	4.60	4.57	+0.03
64–64	A	R–5	4.625	4.625	4.625	4.55	+0.075
64–65	A	R–5	4.625	4.625	4.67	4.64	+0.03
64–66	A	R–5	4.60	4.75	4.60	4.60	0
64–67	Aa	R–5	4.50	4.50	4.53	4.48	+0.05
64–68	A	R–5	4.625	4.625	4.56	4.58	−0.02
64–69	A	R–5	4.625	4.625	4.57	4.58	−0.01
64–70	Aa	R–5	4.50	4.50	4.42	4.42	0
64–71	A	R–5	4.50	4.625	4.50	4.50	0
64–72	Aa	R–5	4.625	4.625	4.50	4.50	0
64–73	Aa	R–5	4.625	4.625	4.48	4.50	−0.02
64–74	A	R–5	4.625	4.625	4.55	4.53	+0.02

NOTES

* The prefix refers to the year the bonds are offered. The suffix refers to the number of comparisons according to our records. A list of all the bonds used to form these comparisons can be obtained from the authors upon request.
† R-5 means the issue cannot be refunded for 5 years.
‡ C-5 means the issue cannot be called for any reason for 5 years.

► ALLEN F. JUNG

Terms on Conventional Mortgage Loans—1965 vs. 1960

A shopping study of conventional mortgage rates for existing houses, conducted in Chicago in November, 1960, showed that rates vary directly with loan-value ratios (subsequently abbreviated by LVR).[1] At that time, banks did not compete with savings and loan associations for long maturities and high LVR mortgages.

Since the first study was undertaken, there have been important changes in bank regulation that have affected the ability of banks to compete with savings and loan associations in the mortgage market. Changes in regulation "Q" have permitted national banks to raise the interest paid on regular savings accounts from 3 percent in 1960 to 4 percent in 1965. In 1960, national banks could lend up to 75 percent of appraised value for a maximum of 20 years. In 1965, these banks could lend up to 80 percent of appraised value for as much as 25 years.

The present study, based on data gathered in March 1965, is designed to evaluate the effects of these changes in public policy. We found about as much variability in savings and loan association mortgage rates and LVR's as was found in November, 1960. By contrast, commercial banks had increased both the maximum maturity and the LVR's of their conventional mortgage loans. Mean interest rates for mortgage loans at com-

Allen F. Jung is Professor of Marketing and Director of the Graduate Business Program at Loyola University, Chicago.

[1] See Allen F. Jung, "Terms on Conventional Mortgage Loans on Existing Houses," *Journal of Finance*, Vol. XVII, No. 3, September 1962.

mercial banks and savings and loan associations were almost identical. Commercial banks were thus competing more successfully for Chicago residential mortgages.

I. *The Sample and Methodology*

The sample for this investigation was identical to that used for the 1960 study, which was selected from the population of all commercial banks and all savings and loan associations in the city of Chicago. These financial institutions have comprised the major source of mortgage funds in Chicago for many years.

A systematic nonproportional sample was used. All 78 banks were ranked, in order, by size of deposits, as of December 31, 1959. All banks with deposits over $100 million, every second bank with deposits between $40 million and $100 million, and every fourth bank with deposits under $40 million were selected. In all, 33 banks were surveyed.

The same type of sample was employed for savings and loan associations. The 27 savings and loan associations with share capital under $1 million were excluded. Two additional savings and loan associations established primarily for employees of two Chicago corporations were also excluded. The remaining 132 savings and loan associations were ranked, in order, by the amount of share capital as of January 1, 1959. All associations with share capital over $40 million were included in the sample. Every fourth association with share capital between $10 million and $40 million and every eighth association with share capital under $10 million were also included. In all, 32 associations were surveyed.

The 1965 sample differs slightly from the original study: One commercial bank with deposits over $100 million and one commercial bank with deposits under $40 million were no longer in business. In addition, one savings and loan association with share capital under $10 million had discontinued business.

The author gathered all data personally by posing as an individual interested in obtaining a conventional loan on an existing house. Two houses, one in a pleasant northwestern suburb bordering on Chicago and a similar one in a southwestern suburb, bordering on Chicago, each approximately five years old, were described to lending officers. The house located closest to the financial institution being shopped was the one referred to on a particular visit. Both houses were actually for sale at the time.

Each loan officer was told that the prospective shopper and the seller had agreed upon a price of $20,000, and that the prospective buyer planned a downpayment of at least $5,000 and might go as high as $10,000. At each institution, the shopper expressed a preference for a 20-year loan.[2] However, if the financial institution limited maximum maturity below this, it was accepted without discussion. Interest rates and all originating costs to the prospective borrower were obtained.

Many loan officers sought personal information from the shopper. They were informed that his annual earnings exceeded $12,000 and that he had been associated with the same employer for 15 years. All visits for this study were completed within a 15-day period in March, 1965.

II. *Terms at Commercial Banks—1965 vs 1960*

A. Loan Availability and Maximum Maturity

In 1965, mortgage loans on existing homes were more readily available at Chicago commercial banks than they were in 1960 (see Table 1). All 31

[2] An LVR of 75 percent and loan period of 20 years were selected for the 1960 study because in 1960 these were the maximum lending terms for national banks.

TABLE 1

Effective Rates on Conventional Mortgage Loans on a $20,000 Existing House Quoted by Commercial Banks in Chicago, March, 1965 and November, 1960*

Bank	Maximum Length of mortgage if less than 20 Years		Amount of Mortgage and Ratio, Loan to Property Value					
			$15,000		$12,000		$10,000	
			75 Percent		60 Percent		50 Percent	
	1965	1960	1965	1960	1965	1960	1965	1960
Large—Deposits over $100 Million†								
1		‡	§	‡	5.57	‡	5.32	‡
2		15	5.64	§	5.39	6.19	5.39	5.94
3	△	7	△	§	△	5.50	△	5.25
4			5.50	6.00	5.25	5.75	5.25	5.50
5			5.64	§	5.64	6.00	5.64	6.00
6		‡	5.50	‡	5.25	‡	5.25	‡
7		15	§	§	5.32	5.94	5.32	5.94
8	15	15	§	§	5.57	§	5.32	6.19
9		10	5.57	§	5.32	5.75	5.32	5.50
10		10	§	§	5.32	§	5.07	5.50
11	15	15	§	§	§	§	5.32	5.50
12			5.38	§	5.38	5.89	5.38	5.96
Mean			5.54	6.00	5.40	5.86	5.33	5.73
Range			5.38-5.64	6.00-6.00	5.25-5.64	5.50-6.19	5.07-5.64	5.25-6.19
Medium—Deposits between $40 Million and $100 Million†								
13		15	5.64	§	5.39	5.94	5.39	5.94
14		15	5.57	§	5.57	6.19	5.57	6.19
15			5.64	§	5.64	6.29	5.64	6.03
16			§	§	5.39	5.96	5.39	5.71
17			5.64	6.14	5.39	5.96	5.39	5.96
18		15	§	§	5.25	§	5.25	5.75
19		15	§	§	5.39	6.04	5.39	5.79
20	10	‡	§	‡	5.64	‡	5.64	‡
21		15	5.64	§	5.39	6.04	5.39	6.04
22		15	5.64	‡	5.39	6.04	5.39	5.79
23		15	5.50	§	5.25	5.50	5.25	5.50
Mean			5.61	6.14	5.43	6.00	5.43	5.87
Range			5.50-5.64	6.14-6.14	5.25-5.64	5.50-6.29	5.25-5.64	5.50-6.19
Small—Deposits Less than $40 Million†								
24			§	§	5.32	5.96	5.07	5.71
25			5.64	§	5.39	6.21	5.39	5.96
26		15	6.14	§	5.89	6.19	5.89	6.19
27	△	‡	△	‡	△	‡	△	‡
28	15	15	5.64	§	5.64	6.19	5.64	6.19
29		10	§	§	5.96	6.46	5.71	6.21
30	15	10	§	§	5.64	§	5.64	6.46
31	15		§	6.21	5.64	5.96	5.39	5.78
32		‡	6.03	‡	6.03	‡	5.78	‡
33			§	§	6.03	6.03	5.78	6.03
Mean			5.86	6.21	5.73	6.14	5.59	6.07
Range			5.64-6.14	6.21-6.21	5.32-6.03	5.96-6.19	5.07-5.89	5.71-6.46
Grand mean			5.74	6.16	5.59	6.06	5.50	5.95
Grand range			5.38-6.14	6.00-6.21	5.25-6.03	5.50-6.29	5.07-5.89	5.25-6.46

* Effective rates have been computed by treating borrower's costs as a discount and amortizing them over 12 years and 8 years for loans of 20 years and loans of less than 20 years, respectively. Borrower's costs have been rounded to the closest ½ percent, to take advantage of financial tables.
† All size classifications of associations are based on November, 1960.
‡ Was not making mortgage loans at time of contact.
§ Was not making mortgage loans at this loan to property value ratio.
△ Out of business.

banks were extending mortgage credit in 1965, while in 1960, 5 of them were not. The maximum maturities were not uniform in either year, but they were higher in 1965 than in 1960.[3] In 1960, 10 banks allowed maximum maturities of 20 years, 13 banks allowed 15 years, and 5 banks allowed 10 years or less. In 1965, 25 banks allowed 20 years, 5 banks allowed 15 years, and one bank allowed 10 years. In 1960, only 3 of the 33 banks were willing to lend 75 percent of appraised value, whereas in 1965, 17 of 31 banks were willing to lend that percentage.

B. Effective Interest Rates

There was some variability in stated and effective interest rates in both years. Stated rates ranged from 5.5 percent to 6.00 percent at the 75 percent LVR, from 5.25 to 5.75 at the 60 percent LVR, and from 5.00 to 5.75 at the 50 percent LVR in 1965. In 1960, the 3 banks offering 75 percent LVR loans quoted a stated rate of 6.0 percent, at 60 percent LVR they ranged from 5.50 to 6.0, and at 50 percent LVR they ranged from 5.25 to 6.00. In both years, variability tended to be greater for loans with lower LVR's and slightly greater for banks in the small deposit class than for banks in other classes.

[3] The following data, derived from Table 1, show changes in maximum maturity by LVR ratios. It should be remembered that in 1965 some banks had a maximum maturity of 25 years. However, all of these are shown as 20 years because this period was the maximum maturity for the desired mortgage.

	75% LVR Number of Banks		60% LVR Number of Banks		50% LVR Number of Banks	
Maximum Maturity	1965*	1960	1965*	1960	1965*	1960
10 years or less			1	3	1	5
15	1		4	10	5	13
20	16	3	25	10	25	10

*There were 2 fewer banks in the 1965 sample.

The range of borrowers' costs narrowed from 1960 to 1965. Eight banks in 1960 asked no compensation for the costs of the loans, while in 1965 only four banks had no loan costs. In 1960, at the 50 percent LVR all banks that charged borrowers' costs required 19 or more basis points. In 1965 only three banks charged 19 or more basis points.

C. Structure of Interest Rates with Respect to Loan to Value Ratios

In both 1960 and 1965, there was a tendency for banks to vary interest rates with LVR's. In 1965, the mean difference between 75 percent LVR and 60 percent LVR was 15 basis points; in 1960, it was 10 basis points. The mean difference between 60 percent LVR and 50 percent LVR was 9 basis points in 1965 and 11 basis points in 1960. No bank varied its charges for loan costs with the size of the LVR.

III. *Terms at Savings and Loan Associations—1965 vs 1960*

A. Effective Interest Rates

There was variability in both stated and effective interest rates in both years at savings and loan associations (See Table 2). The variability was somewhat greater in 1965 than in 1960. For example, in 1965, at the 75 percent LVR, 9 of 31 associations quoted rates other than 5½ percent, while in 1960 only 5 of 31 associations quoted a rate other than 6 percent.

In 1960, stated rates ranged from 5.75 to 6.50 percent at 75 percent LVR, and from 5.50 to 6.25 percent at 60 percent LVR and 50 percent LVR; in 1965, they ranged from 5.25 to 5.75 at 75 percent LVR and 60 percent LVR, and from 5.00 to 5.50 at 50 percent LVR.

In both years, all the associations asked compensation for the costs involved in making a loan. The range in 1960 was from 19 to 36 basis points, and in 1965 it was from 14 to 28 basis points.

TABLE 2

Effective Rates on Conventional Mortgage Loans on a $20,000 Existing House Quoted by Savings and Loan Associations in Chicago March, 1965 and November, 1960*

Association	Amount of Mortgage and Ratio, Loan to Property Value					
	$15,000		$12,000		$10,000	
	75 Percent		60 Percent		50 Percent	
	1965	1960	1965	1960	1965	1960
	Associations with Large Share Capital over $40 Million†					
1	5.64	6.29	5.39	6.03	5.39	6.03
2	5.64	5.89	5.39	5.64	5.39	5.64
3	5.64	6.21	5.39	5.96	5.39	5.71
4	5.64	6.21	5.39	5.96	5.39	5.96
5	5.64	6.21	5.39	6.21	5.39	6.29
6	5.39	6.21	5.39	6.21	5.39	5.96
7	6.03	6.86	6.03	6.61	5.78	6.43
8	5.96	6.29	5.71	6.29	5.46	6.03
9	5.64	6.29	5.39	6.03	5.39	5.85
10	5.64	5.96	5.39	5.96	5.39	5.71
11	5.64	6.36	5.39	6.36	5.39	6.10
Mean	5.68	6.25	5.48	6.11	5.43	5.97
Range	5.39-6.03	5.89-6.86	5.39-6.03	5.64-6.61	5.39-5.78	5.64-6.43
	Associations with Medium Share Capital between $10 Million and $40 Million†					
12	5.64	6.29	5.64	6.36	5.39	6.10
13	5.71	6.36	5.46	6.36	5.46	6.10
14	5.64	6.36	5.39	6.36	5.14	6.36
15	5.89	6.29	5.64	6.03	5.39	5.78
16	5.39	6.29	5.39	6.03	5.39	5.78
17	5.71	6.21	5.46	5.96	5.46	5.71
18	5.89	6.29	5.64	6.29	5.64	6.03
19	5.64	5.96	5.39	5.96	5.39	5.78
20	5.71	6.29	5.71	6.29	5.46	6.29
21	5.71	6.36	5.71	6.36	5.46	6.18
22	5.64	6.29	5.39	6.03	5.39	5.78
Mean	5.69	6.27	5.53	6.19	5.42	5.99
Range	5.39-5.89	5.96-6.36	5.39-5.71	5.96-6.36	5.14-5.64	5.78-6.36
	Associations with Small Share Capital under $10 Million†					
23	5.46	6.29	5.46	6.29	5.21	6.29
24	5.64	6.29	5.64	6.29	5.64	6.03
25	5.96	‡	5.71	‡	5.46	‡
26	5.64	6.21	5.39	6.21	5.39	6.29
27	5.64	6.29	5.64	6.36	5.64	6.10
28	5.64	6.29	5.39	6.29	5.39	6.29
29	5.71	6.36	5.71	6.36	5.46	6.10
30	6.03	6.61	6.03	6.61	5.78	6.61
31	§	6.29	§	6.29	§	6.29
32	5.64	6.29	5.64	6.03	5.64	5.78
Mean	5.71	6.32	5.62	6.30	5.51	6.20
Range	5.46-6.03	6.21-6.61	5.39-6.03	6.03-6.61	5.21-5.78	5.78-6.61
Grand mean	5.70	6.30	5.58	6.25	5.47	6.11
Grand range	5.39-6.03	5.89-6.86	5.39-6.03	5.64-6.61	5.14-5.78	5.64-6.43

* Effective rates have been computed by treating borrower's costs as a discount and amortizing them over a 12-year period. Borrower's costs have been rounded to the closest ½ percent to take advantage of financial tables. For example, to compute the effective rate for a 6 percent stated rate with borrower's costs of 2 percent, the 20-year mortgage table was consulted. The figure at 98 percent, amortized over 12 years, was recorded as the effective rate.

† All size classifications of associations are based on November, 1960.

‡ Was not making mortgage loans at time of contact.

§ Out of business.

TABLE 3

Residential Mortgage Recordings, $20,000 and Under Cook County, Illinois, 1960–1965 (Percent)

Year	Commercial Banks	Savings & Loan Assoc.	Other
1965	16.7	63.5	19.8
1964	15.7	64.1	20.2
1963	10.4	68.0	21.6
1962	6.4	71.9	21.7
1961	5.4	67.8	26.8
1960	5.5	67.7	26.8

Source: Federal Home Loan Bank of Chicago.

B. Structure of Interest Rates with Respect to Loan to Value Ratios

Savings and loan associations in both 1960 and 1965 tended to lower the rate of interest as the LVR decreased. The mean difference between the 75 percent LVR and 60 percent LVR was 5 basis points in 1960 and 12 basis points in 1965; between 60 percent LVR and 50 percent LVR it was 14 basis points in 1960 and 11 basis points in 1965. Thus, the mean spread between 75 percent LVR and 50 percent LVR changed from 19 basis points in 1960 to 23 basis points in 1965. Larger associations were more apt to lower the interest rate one quarter of a point from between 75 percent LVR and 60 percent LVR than were small ones. As it was with commercial banks, no association varied its charges for loan costs with the size of the LVR.

V. *Conclusion*

Commercial banks in Chicago have taken a more active part in the home mortgage market since 1960. The changes in bank activity in the residential mortgage market can be seen quite readily in Table 3. Cook County banks increased their share of the market from 5.5 percent in 1960 to 16.7 percent in 1965. Not only are more banks offering mortgage loans, but more are willing to lend at least 75 percent of the appraised value and more are willing to extend loans for at least 20 years. Undoubtedly the change in banking regulations, increasing both maximum maturity and LVR, has had some effect. The increase in rates paid on savings accounts has also contributed to the banks' willingness to extend mortgage credit to the consumer.

Commercial banks offered lower rates for mortgage loans than did savings associations in 1960, in all three LVR categories. In 1965, the associations quoted effective rates that averaged 4 basis points lower than commercial banks at 75 percent LVR, 1 basis point lower at 60 percent LVR, and 3 basis points lower at 50 percent LVR. There was more competition in 1965 between banks and savings and loan associations, and this competition has erased rate differences in favor of either class of institutions.

►ALVIN L. MARTY

This is a review article of Don Patinkin's MONEY, INTEREST, AND PRICES: AN INTEGRATION OF MONETARY AND VALUE THEORY. *(2nd Ed.) New York: Harper & Row, Publishers, 1965. Pp. xxv + 708. $10.75.*

Patinkin On Money

Patinkin's second edition of *Money, Interest, and Prices* is a substantially revised version of the first edition and a much improved book. This review proposes to highlight general areas of agreement among monetary theorists rather than to discuss disputes that were often no more than semantic snarls.

It is a fundamental proposition in monetary theory that stability of the absolute price level requires that some real excess demand functions somewhere in the economy are not homogeneous of order zero in the absolute price level. In a pure exchange economy, with no borrowing or lending, stability of the absolute price level requires that an individual's real excess demand for commodities is affected by changes in the price level through a real balance effect. Note that stability of the price level implies an analysis of how the system behaves out of equilibrium when it is subject to a shock—such as a once-and-for-all increase in the nominal stock of money. Patinkin is quite right in observing that this issue has been confused with the question of whether the Cambridge equation can be used to determine a finite absolute price level in the absence of a real balance term in the demand function for commodities. It is possible that such a static system is formally consistent, but it is meaningless in the fundamental economic sense that it cannot show, for example, why an increase in the money supply raises prices. Stability of the absolute price level requires an analysis of how the economy behaves out of static equilibrium—we can all agree with Patinkin that it is logically inconsistent to assume Walras' Law, the Cambridge equation, and zero homogeneity of indi-

Alvin L. Marty is Associate Professor of Economics at the Department of Economics and Finance, The City College, The City University of New York.

vidual real excess demand functions. Moreover, once the real balance term is in the demand function for commodities, not only is the system dynamically consistent but, as between alternative positions of long-period equilibrium, the main propositions of classical monetary theory hold. Thus, a once-and-for-all increase in the nominal quantity of money raises the price level proportionately in the long run, leaving relative prices invariant. As between alternative positions of long-run equilibrium, an individual's demand for nominal balances is properly shown as a rectangular hyperbola. The correctness of this proposition is now acknowledged by Patinkin somewhat grudgingly on the grounds that the long-run model is restricted to a very special and incongruous case: namely, that the only way in which an individual can hold wealth is in the form of a sterile asset, money. This seems to me a mere debating point, since a substantially similar criticism can be made concerning Patinkin's short-run model which is restricted to a single week's horizon.

In the short-run model, Patinkin splits time into weeks, with an individual starting each week afresh without memory of the past or anticipation of the future, despite the fact the individual carries over real balances from one week to another. (This assumption puts the rationale for holding real balances on very shaky grounds.) Patinkin's man takes no account of the utility derived from the money stock held over from the end of each week; he is not allowed to survey the entire path to equilibrium but blindly works himself week by week into long periods of equilibrium. It was within the confines of this highly artificial model that Patinkin introduced the concept of inferiority of real cash balances. Inferiority implies that an individual whose equilibrium stock of real balances is cut will so reduce his consumption that the stock of real balances is larger next week than the equilibrium stock, although in the following weeks he will dissave to reattain equilibrium. Patinkin defends himself from the criticism that inferiority of real cash balances (p. 423) is not invariant with respect to the time unit of the analysis, on the ground that when an individual's income period is reduced to a day, while the individual's horizon remains unchanged at one week, his present increment to real balances can be financed by borrowing on the basis of his future income. Thus, according to Patinkin, any extension of an individual's horizon from a single week to a multi-period horizon necessarily presupposes the possibility of borrowing and lending. It is perfectly possible, however, to assume as a first approximation a multi-period horizon which precludes lending and borrowing, and then to extend the model by opening it up to borrowing and lending. Such an approximation might well be more informative than the single-week horizon model, since by endowing the individual with memory and foresight (although perhaps not complete foresight), the previous objections to the single-period horizon are weakened. In any case, Patinkin now concludes that inferiority of real cash balances is without economic significance although, strangely enough, he does not justify this conclusion.

This reviewer believes this conclusion to be correct, since inferiority would imply that an individual faced with a reduction in his permanent flow of manna would commence saving in order to accumulate wealth in the form of real balances—a result which is economically meaningless since it implies that the short-run marginal propensity to save is negative.

During the transition from one long-period equilibrium to another, relative prices may be altered under the impact of a change in the stock of money which is not distributed equi-proportionally, and so are not determined exclusively by the tastes, quantity, and distribution of real

resources, but are affected as well by the distribution of cash balances. If we assume, however, that tastes are the same or that tastes and the redistribution of cash balances are uncorrelated so that the aggregate real demand for each commodity is independent of the distribution of cash balances, then, even in the short run, price ratios are only functions of the real factors. These assumptions are no less reasonable than the assumption often made by monetary theorists (including Patinkin) that global demand remains invariant under a redistribution of wealth. In any case, as Patinkin has rightly insisted, each individual's demand function depends on his total wealth, including his real cash balances.

We may conclude that in a pure exchange economy with an exogeneously determined stock of outside money, the real balance term in the demand function for commodities is a *sine qua non* for the determinacy of the absolute price level. As between positions of long-period equilibrium, characterized by a unique distribution of real cash balances, relative prices are invariant with respect to the stock of money and depend only on tastes and physical endowments. But to conclude from this that, in long-period equilibrium, the real balance term can be dropped from the demand function of each individual in the sense that it is no longer economically relevant, would invalidate the system. Patinkin, contra his critics, has quite rightly insisted on this point.

Part II of Patinkin's book performs a series of comparative static experiments within the confines of a modern short-period Keynesian economy. Thus, once-and-for-all changes in the nominal stock of money or in liquidity preference are postulated and classical propositions such as neutrality of money are put to the test. The exposition has the major advantage of explicitly delineating the type of monetary framework involved: namely, pure outside money, or pure inside money, or a mixed money supply. In the case of the first and last types of monetary system, a real balance effect will manifest itself in both the commodities and bond markets. (Although a formally consistent system with a determinate price level can be constructed if the operation of the real balance effect is restricted to the bond market and the interest mechanism is allowed to operate, such a restriction is economically unreasonable.) The real balance or wealth term corresponds to the net creditor position of the private sector vis-a-vis the government sector; it clearly includes fiat currency, but should exclude government bonds if the taxes raised to pay the coupons on government bonds are fully capitalized. Patinkin assumes government bonds should be included, in part, in the private sector's net wealth on the ground that individuals do not, in fact, fully discount their future tax liabilities. This seems to me improper. It is inconsistent to assume absence of money illusion on the one hand, and not to assume on the other hand that people are fully aware that a change in the price level affects the real burden of their taxes. If taxes are fully capitalized, a major simplification in the model is possible because a direct increase in fiat money is then logically equivalent to an open market operation. In this case, an increase in the real stock of money associated with a reduction in wages and prices is identical with an increase, at a constant price level, in the stock of money brought about either directly, or by an open market operation—a proposition which Keynes stressed in the General Theory.

The following results assume taxes are fully capitalized.[1] If the money supply consists entirely of outside money, a once-

[1] If taxes are not fully capitalized, many possibilities arise. It becomes necessary to distinguish not only between open market operations and a direct increase in the stock of money, but between bonds fixed in nominal terms and in real terms. For example, if government debt

and-for-all change in the nominal stock of money will change prices proportionately, as the Quantity Theory predicts, and the real variables of the system are invariant with respect to this change. On the other hand, a once-and-for-all change in liquidity preference proper—that is, a shift in the desired ratio of cash to bonds with no change in the flow variables of consumption and investment—changes the stock of net wealth and so alters the ratio of savings to income. It follows therefore that the real variables of the system, including the rate of interest, are permanently altered. [2]

If the interest mechanism breaks down either because of a liquidity trap or because expenditures are so unresponsive to the rate of interest that the full employment savings schedule intersects the investment schedule at a negative money rate of interest, the wealth effect brought into play by a fall in prices allows the system to attain full-employment at a nonnegative money rate of interest. Note that in this case, regardless of the exclusion of assets such as government bonds from the wealth effect, the fall in the price level can, in principle, be large enough to raise the real stock of net wealth sufficiently to allow equilibrium at full employment.

Under modern monetary systems, the stock of money is based mainly on debt issued inside the private sector of the economy. Consider an economy in which the total stock of money is issued against debt inside the private sector of the economy—a so-called inside-money economy. By logical assumption, no net wealth effect exists in any market in the economy. Nevertheless, the price level can be in stable equilibrium as long as the interest mechanism is not jammed either because the economy is in the liquidity trap or because a negative money rate of interest would be required to equilibrate the system. Starting from an equilibrium price level, let prices double. The real excess demand equation for commodities is clearly homogeneous of order zero in the absolute level of prices as is the real excess demand for bonds by the nonbanking sector of the economy. It follows that a doubling of the price level doubles the nominal stock of bonds demanded and supplied by the nonbank sector. However, the nominal demand for bonds of the nonbank sector is less than the nominal supply of bonds issued by that sector since the banking sector holds a fixed stock of bonds.[3] Thus, a real excess sup-

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is fixed in real terms and is not capitalized, a direct change in the stock of money would, as Metzler first pointed out, leave the real variables unchanged, whereas if bonds are fixed in nominal terms, a direct increase in the stock of money would raise prices and reduce the real value of government debt—neutrality of money would break down. On the other hand, a shift in the demand for money would change the real stock of outside money with consequent effects on the real variables—a result which would be independent of whether bonds are fixed in nominal or real terms.

[2] This is the type of shift Keynes had in mind in the General Theory. For Patinkin, a shift in liquidity preference is "neutral" when, let us suppose, an increase in demand for cash balances is not only at the expense of bonds but reduces consumption and precisely offsets the potential increase in the consumption-income ratio resulting from the rise in the stock of wealth which occurs when prices decline. Real variables remain invariant when a "neutral" shift in liquidity preference occurs.

[3] This implies that the nominal stock of money is arbitrarily determined. If the banking community consisted of profit-maximizing firms operating with no outside constraints and not subject to any money illusion, the nominal stock of money would be homogeneous of the first degree in the absolute price level; the absolute price level is then completely indeterminate since it impinges on no real excess demand anywhere in the economy. A determinate price level requires that money illusion is imposed upon the banking sector; this is the fundamental reason for some degree of outside control over the private banking community.

ply of bonds is created which has its counterpart in a real excess demand for money. The resulting rise in the interest rate reduces expenditures below the desired supply of commodities at full employment and prices fall. The process continues until both the price level and the interest rate return to their initial equilibrium position. As long as the interest mechanism is not "jammed," stability of the price level is assured by substitution between bonds and money, which, in turn, operates on the rate of interest.

Money is not only neutral in an inside-money economy, but the system itself can be validly dichotomized. All relative prices including the rate of interest are determined in the real sector and are independent of once-and-for-all shifts emanating in the monetary sector.

What happens if the interest mechanism is "jammed?" In most expositions, prices fall without limit and that is the end of the story. In fact, price flexibility may make matters worse. The motivating force behind price reductions is the attempt, on the part of entrepreneurs, to correct the excess supply of commodities; since this attempt is frustrated, it is plausible to assume that entrepreneurs will be led to increase the rate of deflation until that rate exceeds the real rate of interest. When this happens, and the money rate has reached its bottom limit at zero, the real rate will rise, thereby reducing still further the level of expenditures until they reach a limit below which they cannot fall, regardless of the real rate. Wage and price flexibility is a positive evil in this case.

If the money supply is mixed—partially inside and partially outside—a change in the relative ratio of the two kinds of money brings into play a net wealth effect and neutrality of money goes by the board.

The previous discussion has been confined to comparative static exercises which make up the major portion of Patinkin's book. A fundamental and more interesting extension of the analysis would be the testing of propositions such as the neutrality of money in the long-run context of a growing economy. Patinkin devotes a few pages (pp. 359-365) to a tentative discussion of this topic.

In a growing economy characterized by a given rate of decline in prices, two effects are operative: a substitution effect which leads to a once-and-for-all reduction in the demand for commodities, and a rate of increase in real balances which leads to a rate of increase in the demand for commodities. Patinkin concludes that the system may be unstable if the real balance effect is not strong enough to offset the adverse substitution effect. Against this, it can be argued that there is a limit below which real expenditures cannot fall, regardless of the substitution effect, while there is no apparent limit to the amount of expenditures which can be induced by deflation. Contrast this with the results of deflation in a pure inside-money economy. In any case, since real balances are a substitute for the accumulation of physical capital, money cannot be strictly neutral in a growing economy.

Patinkin suggests that the likelihood of neutrality is increased in an inside-money economy—the real balance effect is then absent—when the decline in prices is less than the real rate of interest. In this case, the fall in the money rate can equal the rate of deflation with no rise in the real rate, a rise which would adversely affect expenditures. Even if this condition is fulfilled, however, it would follow that neutrality must be violated.

The opportunity cost of holding real balances is measured by the money rate of interest. The rate of price changes, when anticipated, is reflected in the money rate of interest and, therefore, in the ratio of real balances to real income people choose to hold. Since alternative levels of velocity require the use of different volumes of resources to sustain the payments matrix, strict neutrality must be violated—a result which is inde-

pendent of the presence of a real balance term in the expenditure function.[4]

Strict neutrality in a growing economy can then be violated for two analytically distinct reasons: first, since wealth held in the form of cash balances is a substitute for physical capital, the rate of accumulation of physical capital is a function of the stock of real balances and so of the rate of change of the money stock; second, quite independently of any substitution between money and physical capital, different levels of velocity require different levels of resources to sustain the payments matrix.[5]

However, if the rate of change of prices is within "normal" limits, and some portion of the money supply bears explicit interest, the factors listed above which cause strict neutrality to be violated will have limited play and money may be approximately neutral.

It must be acknowledged that this review does little justice to the scope and depth of Patinkin's book. Space has precluded a discussion, for example, of chapters 4 and 5 in which Patinkin develops a utility theory of money and chapter 7 which deals with money as a producer's good. Nor has any mention been made of the illuminating supplementary notes on doctrinal history, or of Patinkin's discussion of liquidity preference versus loanable funds. On these and other matters, Patinkin makes significant contributions which undoubtedly will be the foundation of future developments in monetary theory.

It is only fair to say, however, that both editions of the book overemphasize the importance of the real balance effect in a production economy with a modern banking system. In the first place, in a static full employment model, any deviation from neutrality caused solely by the presence of a real balance effect is unlikely to be significant, and the system may be regarded as being approximately neutral. For, if the substitution effect which works through the interest rate is operative and the economy is functioning normally, once-and-for-all shifts in the monetary sector are not likely to result in changes in the price level great enough to bring the net wealth effect significantly into play.[6] (The exclusion of government bonds from the stock of net wealth is important in this context.) The failure of any one of a number of conditions, such as neutral redistribution effects, unitary elasticity of expectations, the absence of money illusion, or complete flexibility of prices, allows money to bite, so to speak, on the real variables of the economy. It is the failure of these conditions, rather than the presence of a real balance term in the

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[4] The easiest way to see this is to postulate a rate of increase in the stock of money in an economy with no growth. Strict neutrality would imply that the distribution of resources is independent of the rate of inflation. This is clearly not the case—the higher the rate of interest, the smaller the stock of real balances relative to income that people would hold. The increase in velocity is reflected, for example, in the more frequent timing of payments which firms would find it profitable to institute.

[5] In an elegant article, "Inflation and The Real Rate," in *The Journal of Political Economy*, June 1963, Robert Mundell shows that if we have a real balance term in the expenditure function, the rate of change of prices will not be equal to the rise in the money rate, but will be reflected in a somewhat smaller rise in the money rate and a decline in the real rate, the sum of the two being equal to the rate of change of prices. He concludes "The inflation reduces real money balances and the resulting decline in wealth stimulates increased savings. Real conditions in the economy are altered by the purely monetary phenomenon."

However, even in the absence of a net wealth effect, real conditions are altered since the second source listed above, which also causes neutrality to be violated, would still be operative.

[6] Cf. the remarks of Franco Modigliani in "The Monetary Mechanism and Its Interaction with Real Phenomena," *The Review of Economics and Statistics*, February 1963, Part 2, p. 88.

expenditure function, that leads to significant violations of neutrality.[7]

It should be stated in all fairness that Patinkin develops quite explicitly the nonneutrality that results from the failure of these conditions. But the whole tone of the book gives pride of place to the real balance effect. While this emphasis is appropriate in a pure exchange economy with totally outside money, it is questionable in a production economy with a modern banking system, in which the major portion of the money stock is inside money. For example, the exposition of forces leading to full employment under wage and price flexibility (pp. 320-328) is couched in terms of the real balance effect, while the substitution effect operating via interest rates is left out of the picture.

This issue regarding, on the one hand, the importance of the substitution effect that operates via interest rates and, on the other hand, the real balance effect that operates directly on expenditures independently of interest rates, is fundamental for monetary policy. Consider, for example, the effect of an increase in the stock of money on the level of income. Putting on one side the real balance effect, the magnitude of the increase in income depends upon a concatenation of interest elasticities (we may subsume in these elasticities the "availability" of credit as well). When these elasticities behave poorly, an increase in the stock of money will spend itself mainly in a decline in velocity, and monetary policy is not an effective instrument for stabilization purposes. (If, as Friedman would have us believe, the interest elasticity of the demand for money is negligible, then fiscal policy is rendered completely ineffective.) However, if the increase in the stock of money operates directly on expenditures, then, quite aside from any pessimism regarding interest elasticities, a direct link from money to income is established.

It is here that the distinction between inside and outside money is crucial. In modern monetary systems, the major portion of the money supply consists of inside money (an aspect of the development of the monetary system through time is the economizing on outside money resulting in an increase in the ratio of inside to outside money). Traditional monetary policy increases the stock of outside money such as bank reserves in order to support a multiple expansion in the stock of inside money—an expansion which clearly depends upon the interest elasticity of the demand for money on the part of the bank and nonbank public as well as on the interest elasticities of consumption and investment.[8] In any case, it is the interest elasticities appropriately defined that are crucial for the effectiveness of monetary policy rather than a direct real balance effect operating in the commodities market.[9]

On a more theoretical plane, suppose that an equilibrium price level is dis-

[7] Any reader surveying the *Journal of Political Economy* in the 1950's and early 1960's will run across a number of articles presenting models in which the real balance effect is singled out for special treatment as the culprit responsible for the violation of neutrality.

[8] It may well be that we must take into account not only reported interest yields, but implicit yields on such items as consumer durables.

[9] The distinction between a real balance effect operating directly in the commodities market and the substitution effect operating via interest rates does not, it seems to me, correspond to Friedman's distinction between the monetary and credit effects of monetary policy. Friedman's exposition of the mechanism via which a change in the rate of growth of the money supply affects income is couched in terms of interest elasticities broadly defined and can be handled quite adequately by the traditional IS and LL functions. For Friedman, the LL function is inelastic and the IS function elastic—perverse actions on the part of the monetary authorities with respect to the supply of money cause destabilizing shifts in the LL function.

turbed by an arbitrary increase in prices and that the money supply consists, as it does in developed monetary systems, mostly of inside money. There are two analytically distinct forces operating to bring the system back to equilibrium. The rise in the price level reduces the real value of outside money which produces an excess supply in the commodities market and a fall in prices; in the bond market it produces a rise in the interest rate. Simultaneously, the effect of the reduced real stock of inside money is confined entirely to the bond market. The resulting excess supply of bonds leads to a rise in the interest rate, and because the interest rate is an argument in the expenditure function, it also leads to a fall in prices towards the equilibrium level. Since the major portion of the money supply is inside money, the major burden of adjustment is borne by the interest mechanism.

It is considerations such as these which perhaps have led some monetary theorists to believe that an inside-money model is the appropriate framework to use for the analysis of stability conditions and of the route via which money affects income.[10]

The issue is, of course, basically, an empirical one. The statistical evidence on the importance of the real balance effect which Patinkin summarizes in a most helpful appendix is inconclusive. The variety of measures of wealth which have been used by econometricians as a variable in the consumption function does not correspond to the definition of net wealth that is appropriate for resolving this issue. In the absence of compelling empirical evidence to the contrary, economists may well remain skeptical concerning the importance of the real balance effect in economies with modern banking systems.

Such shifts on the supply side produce corresponding fluctuations in the level of income with only moderate fluctuations in interest rates—a result which can also be rationalized by supposing the LL schedule is highly elastic and the IS schedule inelastic and that destabilizing shifts take place in the IS schedule.

The difficulty with Friedman's explanation is that no independent evidence has been produced by him for dropping the interest variable as an argument in the demand for money; on the contrary, there is fairly conclusive evidence that the interest rate is an important variable in the demand for money. It is one of the curiosities of Chicago monetary theory that the rate of change of prices is used as the crucial variable to explain the demand for money in inflation. Yet, the rate of change of prices is analytically identical with the money rate of interest—is indeed reflected in the money rate under anticipated inflation. Moreover, if Cagan's demand schedule for real balances under hyperinflation is extrapolated to moderate rates of price change, it predicts too low a level of real balances held, which implies that the demand for money is still more elastic with respect to the money rate at negligible rates of inflation than is predicted by Cagan's function.

The distinction between the money and credit effects of monetary policy is made by Friedman in order to emphasize the important point that it is not the level of interest rates that is crucial for policy but rather the relation of the money rate to the rate of profit (Wicksell's natural rate). It is perfectly possible for the money rate to fall, and yet if the natural rate falls still further credit is tightened and the rate of growth of the money supply is reduced. Since we have no direct measure of the natural rate, the rate of change of the stock of money is an important indicator of the relation of the money rate to the natural rate. It is in order to direct attention of the authorities to the rate of change of the money supply that Friedman has emphasized the distinction between the money and credit effects of monetary policy.

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[10] See the remarks of Harry G. Johnson in "Monetary Theory and Policy," *American Economic Review*, June 1962, p. 342.

► BENJAMIN J. KLEBANER

The Money Trust Investigation in Retrospect

The beneficent effect of the best conceivable currency bill will be relatively slight, unless we are able to curb the money trust, and to remove the uneasiness among businessmen due to its power.

—Louis D. Brandeis to Woodrow Wilson, June 14, 1913, in *Papers of Woodrow Wilson*, Library of Congress File VI, No. 93.

Although its effectiveness as a political slogan in a monopoly-conscious era cannot be doubted, "money trust" is a concept which serious writing on American economic history of the early 20th century would do well to avoid. As a descriptive generalization the concept is misleading. It denotes an undemonstrated (and probably undemonstrable) unity of purpose and action among leading financiers. From the indisputable fact of interlocking directorates, it draws the unwarranted conclusion that harmony of business behavior prevailed among firms that had common directors. It ignores the importance of internal financing in business expansion, and overlooks the tendency, then already under way, for Wall Street banks to decline relative to those in the rest of the country.

A generation after the financial editor of the *New York Times* wrote that the "Money Trust Report" had long been

Benjamin J. Klebaner is Professor of Economics at the City College of The City University of New York.

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forgotten, most American history textbooks continue to report the Pujo Committee's findings, if only briefly.[1] "The careful investigation," according to Arthur Link, "revealed beyond cavil . . . the vast and growing concentration of control of money and credit in the hands of a few men." The "great eastern investment banking houses formed a pool of capital that virtually controlled the credit resources of the nation," wrote George Mowry. Three New York City banks—Morgan's, First National, and National City—Jeannette Nichols stated, "largely monopolized" money and credit. David Shannon described the Morgan-Rockefeller alliance as having "achieved near monopoly control over the nation's major credit institutions." Morgan was "the leader of a group of bankers that could determine whether or not any company might borrow money in large amounts or market its securities," according to Kemmerer and Jones.[2] Echoing the original report, Faulkner reasoned that "efforts to break or prevent private monopolies had little chance of succeeding with the control of credit as concentrated as it had become in the United States. In effect it was a supermonopoly of money dominating other monopolies in . . . almost every economic activity of the nation."[3] Yet, neither the testimony heard by the Committee, nor current knowledge of the period, adequately supports such uncritical endorsements of the Pujo Report.

I. The Money Power Suspected

A decade before the publication of the Report, even New Yorkers were remarking about the "money trust" and bruiting rumors about discrimination in lending. Without the consent of the Morgan or Rockefeller interests, the economist Charles Bullock observed, the largest corporations would find financing difficult.[4]

A week-long series of Senate speeches by La Follette in March 1908 listed an impressive array of interlocking directorates. Theirs was the power "to create,

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[1] Alexander D. Noyes, *The War Period of American Finance,* New York: G. P. Putnam's Sons, 1926, p. 44; Samuel E. Morrison and Henry S. Commager, *The Growth of the American Republic,* 4th. ed.; New York: Oxford University Press, 1956, II, pp. 411, 432-433; Dexter Perkins and Glyndon Van Deusen, *United States of America: A History,* New York: Macmillan Co., 1962, II, p. 359; Richard Hofstadter, William Miller, Daniel Aaron, *The United States: The History of a Republic,* Englewood Cliffs, N. J.: Prentice Hall, Inc., 1957, pp. 578-579; Richard N. Current, T. H. Williams, Frank Friedel, *American History: A Survey,* New York: Alfred A. Knopf, Inc., 1961, pp. 633-634; Harvey Wish, *Contemporary America,* rev. ed.; New York: Harper & Row, Publishers, Inc., 1955, p. 164. There is no mention of Pujo in Avery Craven and Walter Johnson, *The United States Experiment in Democracy,* Boston: Ginn and Co., 1957.

[2] Arthur S. Link, *American Epoch,* 2nd. ed.; New York: Alfred A. Knopf, 1963, p. 53; George Mowry, *The Era of Theodore Roosevelt 1900-1912,* New York: Harper & Row, Publishers, Inc., 1958, p. 8; Jeannette P. Nichols, *Twentieth Century United States,* New York: Appleton-Century-Crofts, Inc., 1943, p. 165; David A. Shannon, *Twentieth Century America,* Chicago: Rand McNally & Co., 1963, p. 55; Donald L. Kemmerer and C. Clyde Jones, *American Economic History,* New York: McGraw-Hill Book Co., Inc., 1959, p. 339. See also Howard R. Smith, *Economic History of the United States,* New York: Ronald Press Co., 1955, p. 448.

[3] Harold U. Faulkner, *The Decline of Laissez-Faire,* New York: Rinehart, 1951, p. 44; Cf. Charles C. Chapman, *The Development of American Business and Banking Thought 1913-1936,* New York: Longmans, Green, 1936. "[T]he economic life of the country was in the hands of a comparatively small group of investment bankers in 1913. . . ." (p. 42).

[4] Charles J. Bullock, "The Concentration of Banking Interests in the United States," *Atlantic Monthly,* XCII (1903), 191-192; *Commercial and Financial Chronicle,* XCVI (1913), 681.

artificially, . . . prosperity . . . and panic," the Wisconsin leader argued. The business of America was in the hands of a "small group of men." Representative Charles A. Lindbergh of Minnesota, father of the aviator, called for an investigation on July 8, and again on December 13, 1911, of the so-called money trust. "A proper treatment of the Money Trust resolution," he told the House on February 24, 1912, "could emancipate over 90 million industrial slaves." Young Representative Norris agreed that the "money trust" was "the greatest trust of all." Chairman Henry of the House Rules Committee (whose resolution to investigate banking and currency conditions was approved that day by a vote of 268 to 8) declaimed against "that colossal 'combination' in the city of New York which has within its grasp the credits of the entire Republic." Henry sponsored a second resolution to broaden the scope of the previously authorized inquiry, predicting it would be the most important investigation since 1865. The broadened investigation was approved by a 241 to 15 vote on April 25, 1912, although the size of the majority may not have reflected the true sentiments of the House. Mann of Illinois, the Minority Leader, voted for the February resolution fully expecting the committee to find "that there is no Money Trust, and that there can not be a Money Trust."[5]

Outside the halls of Congress, distinguished citizens and journalists spoke out against the "money trust." The knowledgeable John Moody informed readers of *McClure's* in June 1911 of "the central monopoly of the business of financing popularly known as the 'money power,' . . . a practical working monopoly arrangement between a small group of men and institutions whose interests are identical." "The central machine of capital extends its control over the United States," Moody asserted in the concluding article in the series in that popular magazine. "It sits in Wall Street . . . a central power, directing the inevitable drift of great industry towards monopoly." The financial editor of the Republican *New York Press* affirmed that "a handful of men . . . have become masters of the lifeblood of commerce and industry." This "Money Power," he added, "must check and limit, if they do not destroy, genuine economic freedom and competition."[6]

Samuel Untermyer, a prominent New York City attorney shortly to conduct the Pujo Committee's interrogation, thought the money trust had been miscalled. Rather than a "definite union . . . of the money power," there existed "a close and well-defined 'community of interest' and understanding among the men who dominate the financial destinies of our country and who wield fabulous power over the fortunes of others through their control of corporate funds belonging to

[5] *Congressional Record* (1908) XLII, 3435, 3450; (1911) XLVII, 2751; (1912) XLVIII, 13. Henry credited Lindbergh, *Ibid.*, p. 2383. As a result of Lindbergh's resolutions brief hearings were held. See, House Rules Committee, *Hearings on House Resolution 238* (1911); *Hearings on House Resolutions 314 and 356* (1912); *Congressional Record,* XLVIII, 2395, 2412, 2382, 5345, 2394. Laughlin suggests congressional leaders wanted to let the radicals "blow off steam before the presidential election. . . ." J. Laurence Laughlin, *The Federal Reserve Act: Its Origins and Problems,* New York: Macmillan Co., 1933, p. 100. The congressional concept of the money trust may be deduced from the subjects which the Pujo Committee was instructed to investigate (*Congressional Record,* XLVIII, 5336-37). For a pithy formulation by Lenroot, see *Ibid.*, p. 2387.

[6] John Moody and George Turner, "Masters of Capital," *McClure's Magazine,* XXXVII (1911), 201, 428; Albert W. Atwood, "The Borrower and the 'Money Trust'," *American Review of Reviews,* XLVI (1912), 217-218.

other people. . . ." The situation was "far more serious than is popularly supposed to exist," he warned the Finance Forum in New York at the end of 1911. Even so conservative an economist as Professor Laughlin of Chicago, who considered much of the talk about the "money power" exaggerated, recognized that "in times of pressure, certain persons or institutions are favored to the neglect of others who have quite as good bankable paper."[7]

Governor Woodrow Wilson of New Jersey had told a Harrisburg rally in mid-1911 that "the great monopoly in this country is the Money Monopoly," because control of large-scale credit was dangerously concentrated. Eight months later Wilson expressed his suspicion that large loans could be obtained only if the lenders would be taken into the new enterprise. In accepting the Presidential nomination on August 7, 1912, he affirmed that "comparatively small and closely interrelated groups . . . by their informal confederacy, may control, if they please and when they will, both credit and enterprise." According to Wilson, the confederacies of banks, insurance companies, railways, manufacturing companies, etc., "came about very noticeably, generally without plan or deliberation . . . because there was so much money to be invested and it was in the hands . . . of men acquainted with one another, and intimately associated in business. . . ." (Describing this explanation as "calm and sane," the *Commercial and Financial Chronicle*, however, did not see fit to quote Wilson's reference in the same statement to "the suspicion of a 'money trust', a concentration of the control of credit which may at any time become infinitely dangerous to free enterprise.") Fearing that if not actually in existence the money trust could nevertheless easily be set up, in his acceptance statement Wilson therefore advocated legislation to prevent such a development. By the time he spoke as a candidate in Bridgeport on September 27, 1912, he knew that the "money trust," or rather the credit trust, was no myth. It could "chill and check and destroy genuine economic freedom":[8]

> Credit is so organized and interlaced that you can't get credit on a large scale unless you are willing to go partners with those who already control the credit. . . . The great monopoly of this country is the monopoly of big credits. . . . [Men are] squeezed out of business because Wall Street found them inconvenient, didn't want their competition.

II. The Pujo Committee on the Nature of the Money Trust

The investigating subcommittee conducted hearings from May 16 to June 13, 1912 and again from December 9, 1912 to February 26, 1913. Arsène Pujo, Chairman of the House Committee on Banking and Currency, presided, but counsel Untermyer actually conducted the proceedings. The subcommittee accumulated over 2,200 pages of testimony before submitting an intermediate report (which

[7] Samuel Untermyer, *Is There a Money Trust?* New York: p. 20-22. J. Laurence Laughlin, *Banking Control*, An Address delivered before the Trans-Mississippi Commercial Congress, Kansas City, November 14, 1911, Chicago; p. 6.

[8] Woodrow Wilson, *Public Papers*, New York: Harper & Row, Publishers, Inc., 1925, II, pp. 307, 417-418, 465-466; John Wells Davidson, *A Crossroad of Freedom, The 1912 Campaign Speeches of Woodrow Wilson*, New Haven: Yale University Press, 1956, p. 299; Arthur S. Link, *Wilson, The New Freedom*, Princeton: Princeton University Press, 1956, p. 211; *Commercial and Financial Chronicle*, XCV (1912), 652; Chester Wright of the University of Chicago stated in a talk in March, 1912 that he did not think "the power of centralized control over large masses of capital" was a significant factor in trusts' growth. See "The Trust Problem," *Journal of Political Economy*, XX (1912), 581.

turned out to be the final one as well) on February 28, 1913.

A majority affirmed the existence of a money trust, which it described as:

> An established and well-defined identity and community of interest between a few leaders of finance which has been created and is held together through stockholdings, interlocking directorates, and other forms of domination over banks, trust companies, railroads, public-service and industrial corporations, and which has resulted in a vast and growing concentration of control of money and credit in the hands of a comparatively few men.

The "inner or primary group" consisted of J. P. Morgan and Company, the First National Bank (headed by George F. Baker), and the National City Bank (led by James Stillman), according to the subcommittee majority. Lee, Higginson and Company, and Kidder, Peabody together with three affiliated great Boston banks were said to be closely allied with the three New York City banks. The three largest Chicago banks were also associated with the inner group. Kuhn Loeb and Company of New York was "only qualifiedly allied with the inner group and only in isolated transactions."[9] Between the inner group and Kuhn, Kidder, and Lee the alliance was apparently not as "definite and permanent as between the three members of the inner group." Nevertheless, the majority report stated, as a rule they acted in cooperation with the inner group.

In the decade ending in 1908, the National City Bank had joined Morgan in only one underwriting venture and First National Bank in none. After Morgan acquired $1½ million of National City stock (in 1908 or 1909), however, the "inner group" jointly purchased or underwrote 67 issues for over $1 billion. Morgan and First National were in joint account for another 20 issues for over $300 million without National City's participation. The development of "practical and effective domination and control over many of our greatest financial, railroad and industrial corporations" had occurred largely in the period following the Panic of 1907, the Pujo Report pointed out.[10]

Large corporate borrowers were said to confront "virtually a monopoly the terms of which" they had to accept. The syndicate method of selling, together with the tradition against taking away from a banker the customers he had previously serviced, suppressed competition in investment banking. An American enterprise requiring $10 million could not secure financing if the groups disapproved, the Committee majority alleged. The majority of the Committee conceded that they had no proof of oppressive use of this power; nevertheless the report found "the arteries of credit . . . clogged well-nigh to choking by the obstructions created through the control of these groups. . . ."[11]

Three minority members of the Committee denied the existence of any "money trust," but agreed that the testimony had revealed "a dangerous concentration of credit in New York City and to some extent in Boston and Chicago." A few newspapers, including the *New York Herald,* accepted Morgan's affirmation before the committee that the existence of a "money trust" was impossible. The *New York Times* asserted that proof of its existence was "shadowy, its powers are doubtful, and its ill deeds unproved." What had been proven was "nothing more than the natural result of

[9] U. S. Congress, House Banking and Currency Committee, *Report of The Committee Appointed Pursuant to House Resolutions 429 and 504 to Investigate the Concentration of Control of Money and Credit,* (1913), p. 129 (definition), 131-132, 90. Hereafter cited as the Pujo Report.

[10] *Ibid.*, pp. 83, 86, 105, 130.

[11] *Ibid.*, pp. 104-105, 133.

preferring to do business with those with whom business relations already existed."[12]

Most editors, however, are reported to have agreed that the Pujo Committee had revealed "a degree of financial centralization to which the public cannot afford to be indifferent."[13] The Progressive Philadelphia *North American* described the "money trust" as holding "in a vise-like grip the business of the whole country." "A few men control the business of America," Brandeis bluntly stated at the beginning of his best-selling popularization of the investigation's findings, *Other People's Money and How the Bankers Use It.* A leading student of the trust problem, Professor Durand of the University of Minnesota, thought the Pujo Committee had made clear "the immense power of concentrated interests." Chairman Owen of the Senate Banking and Currency Committee cited the Pujo Report as "showing the existence, substantially, of a vast concentration of power in the hands of a few men over the credit system of the United States."[14]

Much more restrained was the view expressed in *Moody's Magazine* that "the common belief that the capital of the United States was concentrated in a few hands to the extent that they had 'a power dangerous to the republic' was not wholly unfounded. . . ." Since 1900, an "astonishing growth and centralization of power in Wall Street" had taken place. Noyes, the financial editor of The New York *Evening Post*, made perhaps the most judicious appraisal, stating that the Committee's evidence had not substantiated the "sweeping generalizations" of the report, but he too agreed that "a quite undeniable concentration of general control over the larger institutions" had been in progress in the major financial centers.[15]

The Pujo Committee cited the fact that the 20 largest commercial banks and trust companies in New York City increased their share of city banking resources from 35 to 43 percent between 1901 and 1911. The Committee neglected to point out, however, that the share of New York City banking resources in the national total actually declined over the period: In 1912, New York City banks had only 18.9 percent of total U.S. banking resources, compared with 23.2 percent in 1900. Geographic decentralization of American banking resources was under way at the very time that the alarm over a Wall Street-centered money trust was being sounded.[16]

III. The Significance of Interlocking Directorates

Representatives of the Morgan-First National-National City triumvirate joined by directors of the Morgan-dominated

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[12] *Ibid.*, p. 247; "The Money-Trust Evidence," *Literary Digest*, XLVI (1913), 1; *The New York Times*, March 1, 1913, p. 14.

[13] *Literary Digest*, XLVI, 1.

[14] *Philadelphia North American*, as quoted in *Ibid.*, p. 2; Louis D. Brandeis, 63rd Cong., 1st Sess., Senate Report 133, (1913), Pt. 2, p. 6. *Other People's Money and How the Bankers Use It*, new ed.; New York: Stokes, 1932, p. 135. Most of the volume originally appeared in *Harper's Weekly*, November 22, 1913 through January 17, 1914. E. Dana Durand, "The Trust Legislation of 1914," *Quarterly Journal of Economics*, XXIX (1914), 87.

[15] "The Money Trust," *Moody's Magazine*, XIII (1912), 119; XV (1913), 86; Alexander D. Noyes, "The Money Trust," *Atlantic Monthly*, CXI (1913), 656, 664.

[16] Pujo Report, p. 55; A. Piatt Andrew, "*Some Facts and Figures Relating to the Money Trust Inquiry*," The New York *Evening Post*, December 7, 1912, reprinted in 62nd Cong., 3rd Sess., *Senate Document 1003* (1913), 5, 6. While the ten largest New York banks held 7.6 percent of U.S. deposits, London's held 63 percent (*Ibid.*, p. 7). With one-quarter of the country's commercial banking resources in 1900, the share of New York City had shrunk to 20 percent by 1912, and to only 18.4 percent by 1949. Raymond Goldsmith, *Financial Intermediaries in*

Bankers and Guaranty Trust Companies were on the boards of 112 major firms with total resources or capitalization of over $22 billion. Of the 341 directorships, 278 were in 34 banks, 10 insurance companies, 32 transportation systems (mainly railroads), and 12 public utilities. The remaining 63 directorships were in 24 manufacturing and trading corporations.[17]

These 24 were confined to a few sectors: railroad equipment (4), steel (3), two each in copper, fertilizers, sugar, electrical equipment and rubber. The dominant firm in the tin can, meat packing, leather, farm equipment, nickel, paper, and biscuit industries comprised the balance. These lines (everyone of which Nutter includes in the classification of the monopolistic sector of the economy) represented less than 18 percent of the value added in all manufacturing in 1899, and less than 3½ percent of the aggregate national income.

Even if every one of these manufacturing industries were banker-dominated, it was not demonstrated that the extent of Wall Street's foreclosure of economic opportunity was great. Although on the boards of some 20 of the 50 largest manufacturing firms in 1912, the "inner group's" activities did not extend to the bulk of manufacturing or to fields other than railroads, utilities, and financial institutions. Nor did the hearings document the existence of a harmony of action among the 112 firms cited in the Pujo Report. Interlocking directorates were at most *prima facie* evidence of possible combinations in restraint of trade. A primary objective of banker representation on the directorates was to safeguard the interests of investors who had bought securities based on their confidence in the bank rather than the issuing firm. According to Morgan, in most instances such a directorship was "a duty, not a privilege."[18]

IV. *Role of Investment Banking in Financing Business*

The inner group's main impact might have been negative. As Professor Cochran has argued, a corporation may have found it "virtually impossible" to finance a policy opposed by the triumvirate. Given the investor's inclination to buy securities from men he trusted, when promoters could not get the approval of these bankers they "rail . . . and are insistent that the Money Trust be investigated," Dean Joseph F. Johnson of New York University's School of Commerce told the Economic Club of Boston in 1912. According to Untermyer—who had earlier helped to organize a number of combinations—the mere fact that a trust was "the creature of one of the 'great financial powers' and . . . under its protection," was insurance enough against

the American Economy Since 1900, Princeton: Princeton University Press, 1958, p. 120. By mid-1962 New York City's share of total U. S. Commercial bank deposits was 15 percent. (F.D.I.C. *Annual Report* 1962, p. 57).

[17] Pujo Report, p. 89. U.S. Congress, House Banking and Currency Committee, *Money Trust Investigation: Investigation of Financial and Monetary Conditions in the United States* (1913), Exhibit 134 A; G. Warren Nutter, *Extent of Enterprise Monopoly in the United States 1899-1929*, Chicago: University of Chicago Press, 1951, pp. 144-147; A. D. H. Kaplan, *Big Enterprise in a Capitalist System*, Washington, D. C.: Brookings Institution, 1954, pp. 145-146.

[18] See, Letter from Messrs. J. P. Morgan and Company, in response to the invitation of the sub-committee (Hon. A. P. Pujo, Chairman) of the Committee on Banking and Currency of the House of Representatives, New York: February 25, 1913, printed also in *Commercial and Financial Chronicle*, XCVI, March 1, 1913, 606; Frederick L. Allen, *The Lords of Creation*, New York: Harper & Row, Publishers, Inc., 1935, p. 180. Cf. Merle Curti, Richard Shyrock, Thomas C. Cochran, Fred H. Harrington, *An American History*, New York: Harper and Row, Publishers, Inc., 1950, II, p. 189.

competition arising to challenge it. The unavailability of credit for a new firm whose existence conflicted with the plans of the great banks he considered to be the greatest danger posed by the trust.[19]

One partner of the Morgan bank testified before the Committee that it would be "entirely proper" for the bank to finance rivals of U.S. Steel, though it had not done so. During the 15-year period that ended in 1913, Morgan sponsored public issues of each of two different firms in the fields of chemicals, coal, electrical equipment, and trade. In January 1912, Morgan floated an issue of J. I. Case Threshing Machine Company as well as one of International Harvester. Morgan was represented on the boards of both firms.[20]

Railroad (56.6 percent) and public utility bonds (30.3 percent) comprised the predominant proportion of total cash offerings of all United States corporations from 1900 through 1912. In none of these years was the share of industrials as high as 20 percent; commonly it was under 11 percent.[21] Altogether, for the period 1907-12 the Committee listed only 18 industrial issues of $10 million or more (a vast sum for that time) jointly purchased or underwritten by members of the inner group; two of these were for U.S. Steel subsidiaries.[22]

Internal financing supplied 55 percent of the $40 billion of funds acquired by all nonfinancial corporations from 1901 through 1912; the sale of securities provided 34.5 percent. For all manufacturing and mining companies, annually from 1900 through 1914, new security issues averaged $307 million, net profits (adjusted) $427 million, and depreciation allowances (adjusted), $466 million. For large manufacturing corporations, 70 percent of total financing of just over $1,200 million from 1900 to 1910 was internal.[23]

Major newer industries owed little or nothing to Wall Street: autos, aluminum, and motion pictures immediately come to mind as fields of very rapid growth in the years just after the Pujo investigation. Not even Morgan could stay the threat to his railways posed by the rising automobile industry. Lesser firms whittled away dramatically the share of the steel market occupied by his greatest creation.

Early in this century local investment banks appeared in lesser financial centers, although New York remained in the front rank. Cincinnati, e.g., had 25 without branches as well as 3 with branches elsewhere. In 1913, there were altogether 2,150 such firms without branches and 182 with branches in the United States. An unknown number of these, perhaps running into the hundreds, cooperated with the great Wall Street houses. The Committee argued: "It can hardly be expected that the . . . institutions thus seeking participation from this inner group would be likely to engage in business of a character . . . displeasing to the latter or that would interfere with their plans or prestige.[24] However plausible,

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[19] Thomas C. Cochran, *The American Business System*, Cambridge: Harvard University Press, 1957, p. 85; Joseph F. Johnson, quoted in *Banking Reform*, February 16, 1912, p. 2; Samuel Untermyer, *Is There a Money Trust?*, p. 13; House Rules Committee, *Investigation of the Money Trust, No. 1, Hearings on House Resolutions 134 and 356* (1912), p. 12; 63rd Cong. 1st Sess., Senate Committee on Banking and Currency, *Senate Document 232*, (1913), p. 836.

[20] *Money Trust Investigation*, pp. 1834, 2127-2140.

[21] W. Braddock Hickman, *Volume of Corporate Bond Financing Since 1900*, Princeton: Princeton University Press, 1953, pp. 284-290.

[22] *Money Trust Investigation*, pp. 2127-2140; *Money Trust Report*, pp. 92-100.

[23] Goldsmith, *Financial Intermediaries*, pp. 222-223. Internal sources furnished 64 percent of nonfinancial corporations' sources from 1940-56, (*Ibid.*). Daniel Creamer, Sergei P. Dobrovolsky, Israel Borenstein, *Capital in Manufacturing and Mining*, Princeton: Princeton University Press, pp. 163, 117, 131, 142.

[24] Pujo Report, p. 132. Goldsmith, *Supple-*

the Committee's deduction was no substitute for the actual facts, which were not ascertained. In any event, the inner group's pre-eminence was to be short-lived.

After 1900, direct investment by individuals in stocks and, later, bonds increased relative to indirect investment via commercial banks and life insurance companies, thereby weakening "the relative control of Morgan over the supply of capital," as George W. Edwards has pointed out. Apart from railroad financing, this leading historian of finance characterized the post-World War I scene as "a mad scramble for business between the older investment houses and the new."[25] With the rapid spread and growth of out-of-town firms and the entry of new houses in New York itself, the old Wall Street firms declined in significance. The Morgan group (including First National, Guaranty, Bankers Trust and Bonbright and Company) accounted for one-seventh of the new issues placed by leading syndicates between 1927 through 1932. Morgan alone managed 23 percent of the new issues registered with the SEC between 1934 and mid-1939, but only 13 percent in 1948 to 1951. A Chicago house, Halsey, Stuart, became the largest in the country in the post-1945 era.[26]

In 1906, New York forbade life insurance companies to form syndicates or to perform the services of investment brokers; by 1913, contacts between the leading investment banks and insurance companies were only peripheral. Life insurance companies rapidly became a major source of financing as their assets rose from $1.74 billion in 1900 to $4.41 billion in 1912, and $17.5 billion in 1929. Direct placement (mostly with life insurance companies) varied from one-third to three-fifths of total corporate bond issues financed from 1946 through 1959.[27]

IV. Fruits of the Investigation

The incoming Congress of 1913 simply ignored the Pujo Report's "urgent" recommendation that the inquiry be continued. In vain did Untermyer urge Wilson in October 1913 to include "the more important" recommendations of the Pujo Committee in his forthcoming Annual

mentary Appendixes to Financial Intermediaries in the American Economy, New York: 1958, Apx. E. Investment banking has traditionally been a field of high concentration. Of 515 firms in 1937, the 10 largest managed two-thirds of the registered issues floated; the top 5 alone were responsible for more than 55 percent of the flotations. Two generations ago, any given degree of high concentration in investment banking would have had greater significance for the economy than now. Goldsmith, *Supplementary Appendixes*, p. C-73. The 1949 concentration in investment banking was approximately the same as in 1937, (*Ibid.*).

[25] George W. Edwards, *Evolution of Finance Capitalism*, New York: Longmans, Green, 1938, pp. 228-230. Nonfarm households increased their share from 17.4 to 24.9 percent of all corporate stock between 1900 and 1912, and their share of corporate bonds from 5.4 to 7.9 percent. Goldsmith, *The Flow of Capital Funds in the Postwar Economy*, New York: Columbia University Press, 1965, p. 226, 269.

[26] Goldsmith, *Supplementary Appendixes*, pp. C-46, 73; Paul L. Howell, "Competition in the Capital Markets," *Harvard Business Review*, XXXI (May-June, 1953), 89; Guilio Pontecorvo, in his article "Investment Banking and Security Speculation in the late 1920's," *Business History Review*, XXXXII (1958), 170, speaks of the development of "a large competitive fringe," and says that "at least in the 1920's concentration in investment banking could [not] seriously restrict the availability of money capital to business."

[27] Shepard B. Clough, *A Century of American Life Insurance*, New York: Columbia University Press, 1946, pp. 225, 312. For details of a case when Mutual Life outbid Morgan, see pp. 195-196. Morton Keller, *The Life Insurance Enterprise 1885-1910*, Cambridge: Harvard University Press, 1963, p. 283; see also pp. 145, 162, 173. Life Insurance Association of

Message.[28] Not until after the collapse of the banking system in 1933 did Congress forbid security affiliates, drastically curtail underwriting activities of commercial banks, and prohibit an executive from borrowing from his national bank. And the use of public interest tests as a standard for bank merger regulation (as suggested in the 1913 recommendations) came only in 1960. I.C.C. control of railroad bond issues dates back to 1920, but competitive bidding on these dates only to 1944.[29]

The immediate direct effect of the Pujo investigation was to strengthen sentiments hostile to a centralized central banking system. The 1912 Democratic platform included a provision opposing the Aldrich bill and the establishment of a central bank, and called for a "systematic revision of our banking laws" largely to free the nation from panics while protecting the people from the "money trust."[30] The co-author of the law, Senator Owen, thought the Pujo investigation had "contributed in the most important way" to the crystallization of public opinion behind Wilson's drive for the Federal Reserve Act. This position is largely supported by H. Parker Willis, adviser to Carter Glass on the bill. Professor Willis, however, credited the Pujo inquiry for preparing the way for the serious work that eventually led to the formulation of the Act by Glass' *non-investigating* subcommittee of the House Banking and Currency Committee.[31]

Shortly before its enactment, Wilson described the Federal Reserve bill in his first Annual Message to Congress as "necessary to set credit free from arbitrary and artificial restraints." He hailed the measure as having "created a democracy of credit. . . . No group of bankers anywhere can get control. . . ." Echoing these phrases from Wilson's 1914 letter to Representative Underwood, the 1916 Democratic platform proudly described the Act as "a true democracy of credit under government control," which had supplanted an "archaic banking and currency system . . . long the refuge of the money trust. . . ."[32]

America, *Life Insurance Companies as Financial Institutions*, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1962, p. 41; Andrew F. Brimmer, *Life Insurance Companies in the Capital Market*, East Lansing, Mich.: Michigan State University Press, 1962, p. 200; Institute of Life Insurance, *Life Insurance Fact Book 1965*, p. 65; Investment Dealers Digest, *Corporate Financing Directory*, January 28, 1963, p. 15. Today life insurance assets exceed $157 billion.

[28] Woodrow Wilson Papers, File VI, No. 93 (Library of Congress). Wilson replied to Untermyer that "It would give me genuine pleasure to have a talk with you before I set to work on my annual message," but this talk contained none of the recommendations. Wilson, *Public Papers*, New York: Harper & Row, Publishers, Inc., 1926, III, p. 72-73. A note in the *Journal of Political Economy*, XXI (1913), 355, prophesied correctly that "in future legislation there will be traces of the work done by this committee, especially since some of its recommendations are distinctly in line with suggestions often made in the past by disinterested and competent authorities." Pujo Report, p. 17.

[29] Banking Act of 1933, Sec. 12, 16, 21 (48 *Stat. at Large* 182, 184, 189). The 1935 Banking Act (49 *Stat. at Large* 716) sec. 326c, permitted officers to borrow up to $2,500 from their bank, Public Law 86-463, 74 *Stat. at Large* 129 (1960); Investment Banking Association of America, *Fundamentals of Investment Banking*, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1958, p. 496.

[30] Kirk H. Porter, *National Party Platforms 1840-1960*, Urbana, Ill.: University of Illinois Press, 1961, p. 171.

[31] 63rd Cong., 1st Sess., *Senate Document* 232, p. 834; H. Parker Willis, *The Federal Reserve System*, New York: Ronald Press Co., 1923, pp. 113-115. While also noting that the inquiry grew out of "an unquestionable popular demand," Willis nevertheless considered the inquiry "fundamentally injurious . . . from every standpoint."

[32] Woodrow Wilson, *Public Papers*, III, pp.

The Clayton Act's ban on interlocking directorates, which was of very great importance to Wilsonians, is closely linked to the money trust inquiry. The purpose in the case of banks was "to prevent the concentration of money or its distribution through a system of interlocking directorates." Included in the scope of the 1914 law were banks with more than $5 million in resources, and all banks in communities with a population of over 200,000.[33]

American finance capitalism at its zenith as portrayed by the Pujo Committee was more a caricature than a faithful likeness. The investigation tended to exaggerate the very considerable power of the great leaders of finance in 1913. Though Morgan's radical biographer, Lewis Corey, admitted in 1930 that the Pujo Committee had "failed to prove the existence of money trust. . .,"[34] many historians have yet to realize this.[35]

When the role of investment banking in the economic development of the United States is explored on an adequate scale, scholars are not likely to derive much illumination from this arresting slogan of the Progressive Era. "Money trust" is a misleading and inappropriate characterization of a significant epoch in American financial history.

72-73; letter to Underwood, Oct. 17, 1914 in *Commercial and Financial Chronicle*, XCIX (1914), 1179-1180; Porter, *op. cit;* p. 194. On Wilson's view of the Federal Reserve Bill as "an anti-monopoly device" see Joyce G. Skeels, "Monetary Reform in the Progressive Era" (Ph.D. thesis, Wisconsin 1963, Doctoral Dissertation Series 63-7676) pp. 249-250.

[33] 63rd Cong. 2nd Sess., *Antitrust Legislation House Report 627*, 1914, Pt. I, p. 19; Pt. 2, p. 8; Pt. 3, p. 8; Edward S. Mead, "The Political Money Trust," *Lippincott's Monthly Magazine*, XCIII (1914), 764; House Judiciary Committee, *Trust Legislation Hearings*, 1914, pp. 816, 821, (Untermyer), 867, (Clayton), 869 (Paton). Numerous applications for exceptions based on the finding that the banks involved were not "in substantial competition," and (after 1928) that the interlock would not be "incompatible with the public interest" burdened the Federal Reserve Board. Applications averaged 340 a year in the decade ending in 1933. After almost 2,300 descended on the Board in 1934, Congress finally eliminated individual applications in the Banking Act of 1935. (Board of Governors of the Federal Reserve System, *Banking Studies*, Baltimore: Waverly Press, 1941, p. 360). Untermyer criticized Section 8 for not reaching "the vitals of the evils at which it aims." See *loc. cit.*) p. 816.

[34] Lewis Corey, *The House of Morgan*, New York: Franklin Watts, Inc., 1930, p. 397.

[35] Among notable exceptions are Wish, *Contemporary America*, p. 164, and Henry Bamford Parkes, *The United States of America; A History*, 2nd ed., rev., New York: Alfred A. Knopf, Inc., 1960, p. 413; and Arthur Cecil Bining and Thomas C. Cochran, *The Rise of American Economic Life*, 4th ed.; New York: Charles Scribner's Sons, 1964, pp. 421-422.

Current Legal and Regulatory Developments

I. *Lending Limit*

A request by a national bank to include some portion of its depreciated fixed assets in calculating its lending limit was denied by the Comptroller.[1] In denying the request, the Comptroller observed that approval has been given to the write-up of fixed assets not in excess of the value of the assets for Federal income tax purposes. In such cases, the corresponding credit entry has been either to undivided profits or to reserve for contingencies, which accounts may be included in the lending limit computation.[2] However, the Comptroller ruled the arbitrary inclusion of a portion of the market value of a bank's fixed assets in determining the bank's lending limit would not be approved.

The Comptroller has ruled on the question whether that portion of a loan by a national bank which is guaranteed by the Small Business Administration is subject to the bank's lending limitations. An examination of the terms of the Small Business Administration's guaranty indicated that it came within the requirements of exception 10 of 12 U.S.C. 84 as interpreted by Part 3 of the Comptroller's Regulations (12 CFR 3.1). Accordingly, the Comptroller ruled that to the extent that it was guaranteed by the Small Business Administration, a loan would not be subject to any limitation based on the bank's capital and surplus.

The Comptroller has ruled that the requirements and limitations of 12 U.S.C. 371c are not applicable to the loans made by a bank to its subsidiary leasing corporation, where the subsidiary issues its note to the bank, payable out of lease rentals or conditional sale payments and any other proceeds incident to the instrument assigned to the bank or the property subject thereto, and where the instrument issued by the subsidiary is on a nonrecourse basis. Under the foregoing arrangement no other recourse would be had to the subsidiary or its property. The ruling held that inasmuch as the transaction would place the bank in a position similar to that which it would be in if it had purchased the subsidiary's assets, the bank would not be extending credit for the purposes of the requirements and limitations of 12 U.S.C. 371, since the bank had no recourse to the subsidiary and must look solely to the assets transferred for repayment.[3]

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[1] Title 12 U.S.C. 84 generally permits a national bank to lend no more than 10 percent of its capital and surplus to any one borrower. The 10 percent limitation, however, is qualified by 13 statutory exceptions.

[2] See Paragraph 1100 of the Comptroller's Manual.

[3] A previous ruling held that loans by a bank to such a subsidiary leasing corporation would be subject to the collateral requirements and amount limitations of Title 12 U.S.C. 371c. However, this prior ruling was issued where the bank had recourse to other assets of the subsidiary. See *The National Banking Review*, 3, December 1965, p. 264.

The ruling also held that assigned lease rentals would secure full recourse loans from the bank to the subsidiary, since such lease rentals would be assets of the subsidiary that would have a market value and, consequently, would constitute "obligations" within the meaning and collateral requirements of 12 U.S.C. 371c.

II. *Real Estate Loans*

Under the provisions of 12 U.S.C. 371, a lien secured by real estate within the meaning of that section must be in the form of an obligation secured by a mortgage, trust deed, or other instrument upon real estate, which constitutes a first lien on real estate in fee simple. The Comptroller has held that a national bank may grant a mortgage loan secured by property on which there was an unsatisfied lien based on a judgment, where the seller of the property agreed to place in escrow with the bank the amount due on the lien and where the bank's attorney had issued a certificate of title with the exception of the judgment. It was noted that where there exists a prior lien on the real estate to be financed, a national bank, in order to finance such real estate, must hold, in addition to its mortgage on the real estate, funds pledged with it by or on behalf of the borrower in an amount sufficient to cover at all times the prior existing lien, and must be in a position at any time to effect payment of the prior lien, thereby eliminating the intervening lien. In such circumstances, the bank is deemed to have a first lien within the meaning and requirements of 12 U.S.C. 371.

In another ruling, a national bank was authorized to make loans under an arrangement whereby prior commitments to purchase had been signed by responsible mortgage investors, even though the bank's loans would have a maturity in excess of 25 years and be in an amount in excess of 80 percent of the appraised value of the real estate securing the loans. It was pointed out that paragraph 7425 of the *Comptroller's Manual* requires that loans made by a national bank must be made as principal, but that a bank may close in its own name and warehouse mortgage loans which do not conform to the term, amortization, and other requirements of 12 U.S.C. 371, provided that there is primary reliance on a firm commitment from a financially responsible mortgage investor to purchase such loans within a reasonable time. Such loans are not real estate loans within the meaning and subject to the requirements of 12 U.S.C. 371.

The Comptroller clarified Item 4 of Paragraph 3000 of the *Comptroller's Manual* in a ruling that real estate purchased by a bank upon foreclosure becomes "other real estate" at the time of foreclosure. He also noted that a national bank is permitted to sell real estate obtained by purchase at foreclosure and retain title for a period longer than five years, where a party other than the foreclosing bank has possession of the property.

In another ruling, interpreting paragraph 2150 of the Comptroller's Manual,[4] the Comptroller held that a bank which makes a residential construction loan with a take-out commitment from a reputable savings and loan association may secure the excess portion of the real estate loan by an assignment of an account with the savings and loan association, along with a savings passbook and a signed withdrawal slip.

Where the bank has an assignment of a savings and loan account—an asset to

[4] Paragraph 2150 of the *Comptroller's Manual* states that a real estate loan which is excessive in relation to the appraised value of the real estate will not be considered in violation of the statute if the excessive portion is fully guaranteed or fully secured by pledged collateral in the form of a savings account, certificate of deposit, assignment of rents, or other security to which the bank has ready access and first claim.

which the bank has ready access and first claim—such a transaction comes within the contemplation of paragraph 2150. However, it was pointed out that the portion of the loan representing an extension of credit in excess of the amount permitted by 12 U.S.C. 371 should be amortized on the same basis as would be satisfactory to the bank as a credit matter where such extension of credit were represented by a separate note.

The Comptroller also recently ruled that take-out commitments issued by several banks amounting to 95 percent of another bank's real estate loan do not meet the requirements of paragraph 3 of 12 U.S.C. 371, and paragraph 2400 of the *Comptroller's Manual.* This paragraph states that there must be a "valid and binding agreement entered into by a financially responsible lender to advance the full amount of the bank's loan upon the completion of the buildings." The requirement may be met by any form of take-out provision that includes a valid and binding agreement which will result in the full repayment of the bank's loan upon completion of the buildings.

III. *Certification of Checks*

The Comptroller has ruled that the decision whether a national bank should certify checks is a matter of policy to be determined by the individual bank. It was also stated that the Uniform Commercial Code[5], which codifies the generally accepted position in this matter, states that unless otherwise agreed upon with its customer or another person, a bank has no obligation to certify a check.

IV. *Payroll Servicing*

The Comptroller has approved a plan whereby a depositor in a national bank will maintain a payroll account in the bank and will pay to the bank a service charge based on the number of checks issued. It was observed that under paragraph 7485 of the *Comptroller's Manual,* national banks may disburse payroll funds deposited with them by a customer to that customer's employees. Disbursement may be made by direct payment to any employees, or by crediting an account in the employee's name at the disbursing bank. To further such an arrangement, a national bank may utilize the services and facilities of another bank in the performance of this activity provided the arrangement between the two banks does not contravene the terms of the agreement between the initiating bank and its customer, even though the servicing bank with which it contracts will charge the initiating bank a sum per check greater than the amount it charges to its depositor.

V. *Bad-Debt Reserves*

The extent to which a reserve for bad debts may be utilized for computing a borrower's legal lending limit, and whether the elimination of such a reserve would be subject to corporate income taxation, was the subject of a recent ruling by the Comptroller. Paragraph 1100(c) of the *Comptroller's Manual* defines the term "unimpaired surplus fund," [6] as used in 12 U.S.C. 84, as excluding "Internal Revenue formula bad debt reserve to the extent taxable." Revenue Ruling No. 65-92 [7] permits a bank to deduct additions to its reserve for bad debts until the reserve equals 2.4 percent of loans outstanding at the close of the taxable year. Any deductions in excess of

[5] Uniform Commercial Code Sections 3-411.

[6] The term "unimpaired surplus fund" as used in Title 12 U.S.C. 84 includes all capital accounts (other than capital stock) that are derived from either paid-in capital funds or retained earnings, not subject to known charges, and that are considered interchangeable by resolution of the bank's board of directors.

[7] C.B. 1965-1, 112.

this percentage would be subject to taxation. Moreover, an elimination of the reserve would be subject to taxation to the extent that the deductible portion has not materialized in worthless loans and the establishment of the reserve has resulted in a tax benefit.

Accordingly, a bad-debt reserve within this 2.4 percent limit recognized by the Internal Revenue Service may be used in determining the bank's "unimpaired surplus fund." In addition, any amount in the bank's bad-debt reserve in excess of this 2.4 percent limit may also be used in determining the bank's "unimpaired surplus fund," to the extent that this additional amount is from income on which tax has been paid and is, therefore, subject to no further taxation.

VI. *Exercise of Trust Powers*

On January 18, 1966, the Securities and Exchange Commission heard oral argument by the First National City Bank of New York in connection with its application for certain exemptions from the Investment Company Act of 1940,[8] which would enable the bank to register its proposed "Commingled Investment Account" under the Investment Company Act. The proposed Account would consist primarily of a pool of equity securities purchased with the aggregate proceeds received by the bank under managing agency agreements. The bank's application was opposed by the Investment Company Institute, the National Association of Securities Dealers, Inc., the Association of Mutual Fund Plan Sponsors, Inc., the Association of Stock Exchange Firms and the Investment Bankers Association of America. The Commission's Division of Corporate Regulation generally supported the bank's request for exemptions.

The Comptroller furnished a letter, as part of the public record of the Commission proceedings, which indicated his view that the bank's proposed Account would be in full compliance with the Federal banking laws and the applicable regulation of the Comptroller's Office.[9]

The Securities and Exchange Commission has issued a decision granting in part the bank's application.

The Account, which will register under the Act as a diversified, open-end management investment company, is to be operated as a collective investment fund for investments of $10,000 or more pursuant to applicable regulations of the Comptroller. No sales load or redemption charges will be imposed. The operation of the Account will be subject to the supervision of a committee—the statutory equivalent of a board of directors—and the bank will serve as the Account's investment adviser.

Principally, the application requested exemptions in order to permit all but one of the members of the committee, which under the bank's proposal would initially consist of seven persons, to be affiliated with the bank. This request was refused, even though the SEC's order permits up to 60 percent of the committee members to be affiliated. The SEC emphasized that there were substantial safeguards against conflicts of interest which could arise between the Account and the bank's commercial banking activities, particularly by virtue of the supervision and regulation of the banking authorities.

Collective investment funds of managing agency accounts were authorized after the 1963 revision of the banking

[8] Title 15 U.S.C. 80a-1 to 80a-52 (1964).

[9] Title 12 CFR 9.

regulations. The Comptroller had previously approved the proposed arrangement under Regulation 9 (12 CFR 9); and the Federal Reserve Board ruled that it would not violate a provision of the banking laws relating to interlocking relationships between commercial banks and companies engaged in certain securities activities.

VII. *Subsidiary Corporations*

The Comptroller has permitted a national bank to organize an agricultural credit corporation that would be a wholly owned subsidiary of the bank, in order to help it fulfill the agricultural credit needs of its area. The ruling also noted that the bank may carry the investment in such corporation as an asset, and that the third paragraph of 12 U.S.C. 371c exempts bank affiliates that are engaged solely in the business of an agricultural credit corporation or livestock loan company from the provisions of 12 U.S.C. 371c.

VIII. *Corporate Practices*

A. Change of Control Reports

The Comptroller has recently pointed out the duties of national bank chief executive officers to report changes of ownership of their bank's stock. Section 12.1 of the Regulations (12 CFR 12.1) calls for a report to the Comptroller by the president or other chief executive officer of a national bank when he has reason to believe a change in ownership has taken place which effects a change in control of the bank. The Regulation also specifies the information that should be included in the report and defines the term "control" as used therein to mean ". . . the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of the bank."

Section 12.1 of the Regulations is self-contained, and is applicable to all banks under the jurisdiction of the Comptroller's Office, regardless of the number of their shareholders. It should be distinguished from Sections 12.2 through 12.12, which are the implementing regulations pursuant to Section 16 of the Securities Exchange Act of 1934 and apply only to national banks registered under that Act.[10] In particular, Section 12.2 requires each principal stockholder, director, or principal officer of such a national bank to report his initial holdings and subsequent "substantial" changes in his beneficial ownership of the bank's shares. The definitions of "principal officer," etc., contained in Section 12.3 relate only to the terms found in Sections 12.2 through 12.12, and consequently, the necessity to report substantial changes (as that term is defined) in beneficial ownership arises only when the bank has the requisite number of shareholders of record requiring its registration pursuant to Section 12(g) of the Securities Exchange Act.

B. Reports of Changes in Beneficial Ownership

As a general rule, the directors, "principal officers" and "principal stockholders"[11] of national banks registered pursuant to Section 12(g) of the Securities Exchange Act of 1934, must file ini-

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[10] At present, only banks with at least 750 shareholders of record must register. After May 1, 1967, banks having 500 or more shareholders of record must register. Registration by a national bank is effected by compliance with Title 12 CFR 10.

[11] The terms are defined in Title 12 CFR 12.3.

tial statements of beneficial ownership of their banks' equity securities and statements reflecting subsequent changes in beneficial ownership.[12] The Comptroller has ruled that statements of changed beneficial ownership need be filed only when there has been a *substantial change*. "Substantial change" is defined in 12 CFR 12.3 to mean "the acquisition or disposition of 500 shares or more than 5 percent of the outstanding capital stock of the bank, whichever is less." Also, "if any transaction when added to previously unreported transactions, could qualify as a substantial change as defined herein, all such transactions shall be considered a 'substantial change' and be reported." Accordingly, changes in ownership by purchase or sale occurring over a period of time must be reported when they total 500 shares in the aggregate.

C. Lost Stock Certificates

In an interpretive opinion, the Comptroller has noted that 12 U.S.C. 52, relating to national bank stock certificates, contains no specific provision governing the corporate procedures to be followed in the case of lost, stolen, or destroyed certificates. Furthermore, the standard articles of association and by-laws recommended by the Comptroller also make no reference to such contingencies. Accordingly, the procedures for replacing lost, stolen or destroyed stock certificates that meet the requirements of the state law where the bank is located are permissible to national banks. The opinion also stated that, inasmuch as the bank may be liable to a bona fide purchaser of the original stock certificate, as a matter of prudence it may also wish to provide for a bond of indemnity at least equal to the market value of the missing stock certificate.

D. Dividend Payments

As a general rule, the directors of a national bank may declare dividends out of so much of the net profits of the association as they shall judge expedient, ". . . except that until the surplus fund of such association shall equal its common capital, no dividends shall be declared unless there has been carried to the surplus fund not less than one-tenth part of the association's net profits of the preceding half year in the case of quarterly or semi-annual dividends, or not less than one-tenth part of its net profits of the preceding two consecutive half-year periods in the case of annual dividends. . . ."[13] Consequently, where the surplus fund of a national bank does not equal its common capital, Section 60 requires that no dividend shall be declared unless one-tenth of the net profits of the preceding two consecutive half-year periods has been "carried" to the surplus fund.

The Comptroller has ruled that this requirement is not satisfied for a dividend declared on or about December 31, 1965, by a transfer of the bank's 1964 profits. It was also noted that, in the event the contemplated 1965 dividend exceeded the net profits of 1965 combined with the bank's retained net profits of the preceding two years, less any required transfer to surplus or a fund for the retirement of any preferred stock, the approval of the Comptroller would be required.[14]

IX. *Leasing of Personal Property*

As a general rule, a national bank may become the owner and lessor of personal property acquired upon the specific re-

[12] Forms OR–1 and OR–2 are the designated forms for such reports.

[13] Title 12 U.S.C. 60(a).

[14] Title 12 U.S.C. 60(b).

quest and for the use of a customer.[15] The Comptroller ruled that, at the specific request of a customer, a national bank could acquire and lease to him under a "bareboat charter" certain ocean-going vessels which would be either entirely new ships or ships rebuilt to such an extent that they would constitute new equipment for the purposes of the investment tax credit under the Internal Revenue Code. Such vessels were ruled to constitute "personal property" within the meaning and application of such terms as they are used in paragraph 3400 of the *Comptroller's Manual.*

X. *Pledge of Assets*

Title 12 U.S.C. 265 provides that "all insured banks designated for that purpose by the Secretary of the Treasury shall be depositories of public money of the United States (including, without being limited to, revenue and funds of the United States, and any funds the deposit of which is subject to the control or regulation of the United States or any of its officers, agents, or employees. . . .). The Secretary of the Treasury shall require of the insured banks thus designated satisfactory security by the deposit of United States bonds or otherwise, for the safekeeping and prompt payment of public money deposited with them. . . . Provided, that no such security shall be required for the safekeeping and prompt payment of such parts of the deposits of the public money in such banks as are insured deposits. . . ."

Recently, the Comptroller ruled that funds deposited in a national bank by the University Corporation for Atmospheric Research, regulated and controlled by the National Science Foundation, an agent of the United States, are "public money" for which national banks may pledge their assets under authority of 12 U.S.C. 265.[16]

XI. *Trust Departments*

The Comptroller has recently issued a policy statement pertaining to agreements between banks and local bar associations. Such agreements have been adopted generally at the urging of the bar associations, and relate to the division of services to be rendered by banks and attorneys in the administration of trusts and estates.

The Comptroller noted that agreements of this nature tend to define more clearly the law of the state concerning alleged unauthorized practices of law by bank trust departments and trust companies or their officers, and are generally unobjectionable to the extent that they tend to eliminate the probability of inter-professional lawsuits and the concurrent expense which can represent an unnecessary drain on a bank's resources. These agreements can also benefit the recipient of trust services by preventing duplication of tasks and charges.

However, it was emphasized that no agreement or understanding may be entered into by any national bank with one or more other banks, or bar associations or similar group of lawyers, which binds a bank to a common set of fees or charges, or to any arrangement or understanding which has the effect of unreasonably restraining the free and competitive exercise of fiduciary functions of national banks.

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[15] See paragraph 3400 of the *Comptroller's Manual* in which it is also noted that: (1) the bank may incur additional obligations as may be incident to becoming the owner and lessor of the property; (2) that such transactions do not result in obligations subject to the lending limits of 12 U.S.C. 84; and (3) that the lease payments are in the nature of rent rather than interest and, consequently, are not subject to Title 12 U.S.C. 85 and 86.

[16] For earlier rulings, see *The National Banking Review*, 2, December 1965, p. 270.

The Comptroller observed that the existence of such fee-fixing and other types of restrictive agreements by national banks is in violation of the regulation promulgated in 12 CFR 7.2, which, although relating specifically to service charges, makes clear that any charge made by a bank must be determined as a result of unilateral action by the bank, set forth pursuant to a corporate resolution of record and complied with in full.

The Comptroller's statement observed that it is therefore incumbent on the board of directors of each national bank to re-examine its fees and charges for trust services to be certain that they have been arrived at independently and without agreement, arrangement, consultation or understanding, with any other bank. He also noted that it should be equally clear that a bank has no right to bind its customers to the fee schedule of another profession. The Comptroller has instructed examiners in the next and subsequent examinations to see to it that these instructions are fully observed. The Comptroller stated that any national bank which has entered into agreements of the type described may, if doubt exists as to their legality, submit them for an opinion, and if violative of the regulation, they should be expressly disavowed of record by action of the board of directors.

XII. *Litigation Involving Decisions of the Comptroller*

In the United States District Court for the District of Utah, Walker Bank and Trust Company, a state bank, challenged the Comptroller's approval of a branch of the First National Bank of Logan in Logan, Utah. The complaint cited certain state law restrictions as the basis of opposition. The court in a Memorandum Opinion held that the Comptroller's approval of the branch was authorized under 12 U.S.C. 36(c)(1), and that state restrictions did not apply. The Court of Appeals for the Tenth Circuit, on October 26, 1965, reversed and remanded, holding that according to 12 U.S.C. 36(c)(1), the Comptroller of the Currency is bound by the state requirements.

The Solicitor General, at the request of the Comptroller, is seeking Supreme Court review of this and another Utah branch case.[17] The basic issue in these cases is the extent to which the Comptroller is bound by the provisions of state law in approving an application for a branch of a national bank.

The Comptroller's position was sustained in a Michigan branch case, when the District Court held, in the course of granting the Comptroller's motion for summary judgment, that the Comptroller is not required to conduct a formal hearing in connection with a branch application and that the Comptroller is not bound by provisions of state law, other than those relating to location, in approving outside branches for national banks. Following trial on the question whether the proposed branch location was in a separate village, the District Court sustained the Comptroller's approval of the branch application. Plaintiff then filed Notice of Appeal. *American Bank and Trust Company* v. *James J. Saxon and Dart National Bank*, C.A. No. 4833, (D.C.W.D. Mich. 1966).[18]

In an Ohio branch case challenging the Comptroller's approval of a branch application on the grounds that the Comp-

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[17] *Walker Bank and Trust Company* v. *James J. Saxon, Comptroller of the Currency, and the First National Bank of Logan*, No. 7981 (C.A. 10 1965) and *Commercial Security Bank* v. *Saxon*, No. 19,357 (C.A.D.C. 1965). A discussion of these cases appeared in *The National Banking Review*, 1, September 1963, p. 144; 2, December 1964, pp. 272-273; 2, March, 1965, p. 435; 3, December 1965, p. 273.

[18] A discussion of this case appeared in *The National Banking Review*, 2, September 1964, pp. 100-101.

troller failed to grant plaintiff state bank a hearing and that no need for the branch was demonstrated, plaintiff state bank moved for a dismissal after its motion for summary judgement was denied. The District Court granted plaintiff's motion and dismissed the case with prejudice to the plaintiff. *The Continental Bank* v. *The National City Bank of Cleveland and James J. Saxon, Comptroller of the Currency of the United States,* C.A. No. C-65-484 (D.C.N.D. Ohio 1966).[19]

In a Mississippi case concerning the chartering of a new bank, a District Court has upheld the Comptroller's position that the individual plaintiffs, but not the plaintiff banks, be dismissed for lack of standing and that no hearing is required. The court will examine the administrative record of the Comptroller to determine if his decision was based on substantial evidence. *Citizens Bank of Hattiesburg* v. *James J. Saxon,* C.A. No. 1998 (D.C.S.D. Miss. 1966).[20]

DENNIS JAMES LEHR
Associate Chief Counsel,
Office of the Comptroller
of the Currency

[19] A discussion of this case appeared in *The National Banking Review,* 3, September 1965, p. 119.

[20] A discussion of this case appeared in *The National Banking Review,* 3, December 1965, p. 274.

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TABLE 1

Number of national banks and banking offices, by states, December 31, 1965

	National banks			Number of branches	Number of offices
	Total	Unit	With branches		
United States	4,813	3,482	1,331	8,756	13,569
Alabama	86	58	28	123	209
Alaska	5	0	5	40	45
Arizona	4	1	3	173	177
Arkansas	65	37	28	57	122
California	95	55	40	1,742	1,837
Colorado	117	117	0	0	117
Connecticut	29	11	18	167	196
Delaware	5	3	2	4	9
District of Columbia	8	0	8	47	55
Florida	195	195	0	0	195
Georgia	57	32	25	120	177
Hawaii	2	0	2	40	42
Idaho	9	3	6	94	103
Illinois	417	417	0	0	417
Indiana	122	59	63	254	376
Iowa	101	75	26	28	129
Kansas	170	147	23	23	193
Kentucky	81	40	41	118	199
Louisiana	47	17	30	130	177
Maine	21	6	15	69	90
Maryland	50	22	28	186	236
Massachusetts	93	29	64	319	412
Michigan	97	42	55	397	494
Minnesota	193	191	2	6	199
Mississippi	35	8	27	64	99
Missouri	96	78	18	18	114
Montana	50	50	0	0	50
Nebraska	126	109	17	17	143
Nevada	3	1	2	32	35
New Hampshire	51	33	18	22	73
New Jersey	147	48	99	419	566
New Mexico	34	15	19	52	86
New York	198	104	94	954	1,152
North Carolina	29	8	21	261	290
North Dakota	42	37	5	5	47
Ohio	224	98	126	515	739
Oklahoma	222	197	25	25	247
Oregon	12	7	5	209	221
Pennsylvania	373	224	149	783	1,156
Rhode Island	4	0	4	53	57
South Carolina	25	5	20	176	201
South Dakota	33	27	6	37	70
Tennessee	76	25	51	200	276
Texas	545*	545	0	0	545
Utah	13	9	4	55	68
Vermont	27	15	12	31	58
Virginia	118*	50	68	325	443
Washington	31	15	16	340	371
West Virginia	79	79	0	0	79
Wisconsin	110	98	12	24	134
Wyoming	40	40	0	0	40
Virgin Islands	1	0	1	2	3
D.C.—all†	15	1	14	82	97

* Includes one bank organized under Section 11 of the Federal Deposit Insurance Act.
† Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

TABLE 2

Status of applications for national bank charters, and charters issued, calendar 1965

Applications carried over from 1964	81
1 Conversions	
80 Primary	
Applications received 1965	139
31 Conversions	
108 Primary	
	220
Applications approved 1965	52
25 Conversions	
27 Primary	
Applications rejected 1965	122
2 Conversions	
120 Primary	
Applications abandoned 1965	19
3 Conversions	
16 Primary	
Applications pending, December 31, 1965	27
2 Conversions	
25 Primary	
	220
* * * * * *	
National banks chartered 1965	103
25 Conversions	
78 Primary	

TABLE 3

Status of applications for national bank charters*, and charters issued*, by states, calendar 1965

	Received†	Approved	Rejected	Abandoned	Pending Dec. 31, 1965	Charters issued
United States	188	27	120	16	25	78
Alabama	2	0	2	0	0	6
Alaska	0	0	0	0	0	0
Arizona	0	0	0	0	0	0
Arkansas	4	2	2	0	0	1
California	24	0	19	4	1	11
Colorado	4	0	2	0	2	3
Connecticut	6	0	6	0	0	3
Delaware	0	0	0	0	0	0
District of Columbia	0	0	0	0	0	0
Florida	23	0	16	1	6	7
Georgia	3	1	2	0	0	1
Hawaii	3	0	1	2	0	0
Idaho	0	0	0	0	0	0
Illinois	8	1	7	0	0	5
Indiana	0	0	0	0	0	1
Iowa	3	0	2	1	0	0
Kansas	3	0	2	0	1	1
Kentucky	1	0	0	1	0	0
Louisiana	4	1	3	0	0	0
Maine	0	0	0	0	0	0
Maryland	2	0	1	0	1	1
Massachusetts	4	1	3	0	0	2
Michigan	5	1	2	1	1	1
Minnesota	1	0	0	0	1	0
Mississippi	8	2	4	0	2	2
Missouri	8	2	4	1	1	4
Montana	3	0	3	0	0	0
Nebraska	1	1	0	0	0	1
Nevada	1	0	1	0	0	0
New Hampshire	1	1	0	0	0	0
New Jersey	4	0	4	0	0	3
New Mexico	2	0	2	0	0	1
New York	5	1	3	0	1	2
North Carolina	1	0	1	0	0	0
North Dakota	0	0	0	0	0	0
Ohio	6	1	4	0	1	4
Oklahoma	5	0	3	2	0	0
Oregon	1	1	0	0	0	1
Pennsylvania	1	0	0	1	0	0
Rhode Island	0	0	0	0	0	0
South Carolina	2	0	2	0	0	0
South Dakota	0	0	0	0	0	0
Tennessee	6	2	4	0	0	1
Texas	10	5	3	0	2	8
Utah	1	0	1	0	0	1
Vermont	0	0	0	0	0	0
Virginia	2	1	0	1	0	2
Washington	5	0	5	0	0	3
West Virginia	2	1	1	0	0	0
Wisconsin	6	2	1	0	3	1
Wyoming	3	0	3	0	0	1
Virgin Islands	1	0	0	1	0	0
Puerto Rico	2	0	1	0	1	0
Guam	1	0	0	0	1	0

* Excludes conversions.

† Includes applications pending as of December 31, 1964.

TABLE 4

Status of applications for conversion to national bank charters, and charters issued, by states, calendar 1965

	Received*	Approved	Rejected	Abandoned	Pending Dec. 31, 1965	Charters issued
United States	32	25	2	3	2	25
Alabama	0	0	0	0	0	0
Alaska	0	0	0	0	0	0
Arizona	0	0	0	0	0	0
Arkansas	0	0	0	0	0	1
California	0	0	0	0	0	0
Colorado	0	0	0	0	0	0
Connecticut	1	1	0	0	0	1
Delaware	0	0	0	0	0	0
District of Columbia	0	0	0	0	0	0
Florida	2	2	0	0	0	1
Georgia	3	3	0	0	0	2
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	1	1	0	0	0	1
Indiana	0	0	0	0	0	0
Iowa	3	2	1	0	0	2
Kansas	0	0	0	0	0	0
Kentucky	0	0	0	0	0	0
Louisiana	0	0	0	0	0	0
Maine	0	0	0	0	0	0
Maryland	0	0	0	0	0	0
Massachusetts	0	0	0	0	0	0
Michigan	2	1	0	0	1	1
Minnesota	0	0	0	0	0	0
Mississippi	5	4	0	1	0	5
Missouri	0	0	0	0	0	0
Montana	4	2	0	2	0	2
Nebraska	0	0	0	0	0	0
Nevada	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	1
New Jersey	2	2	0	0	0	1
New Mexico	0	0	0	0	0	0
New York	1	1	0	0	0	1
North Carolina	0	0	0	0	0	0
North Dakota	0	0	0	0	0	0
Ohio	3	2	0	0	1	1
Oklahoma	0	0	0	0	0	0
Oregon	0	0	0	0	0	0
Pennsylvania	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0
South Carolina	1	1	0	0	0	1
South Dakota	1	1	0	0	0	1
Tennessee	0	0	0	0	0	0
Texas	0	0	0	0	0	0
Utah	0	0	0	0	0	0
Vermont	0	0	0	0	0	0
Virginia	1	1	0	0	0	1
Washington	1	0	1	0	0	1
West Virginia	0	0	0	0	0	0
Wisconsin	0	0	0	0	0	0
Wyoming	1	1	0	0	0	1
Virgin Islands	0	0	0	0	0	0

* Includes applications pending as of December 31, 1964.

TABLE 5

Status of de novo branch applications of national banks, by states, October 1-December 31, 1965

	Received*	Approved	Rejected	Abandoned	Pending Dec. 31, 1965
United States	423	162	38	11	212
Alabama	5	4	0	0	1
Alaska	3	2	0	0	1
Arizona	6	2	2	0	2
Arkansas	4	2	0	0	2
California	60	19	12	0	29
Colorado	0	0	0	0	0
Connecticut	4	2	1	0	1
Delaware	0	0	0	0	0
District of Columbia	5	1	1	1	2
Florida	0	0	0	0	0
Georgia	2	2	0	0	0
Hawaii	1	0	0	0	1
Idaho	5	4	0	0	1
Illinois	0	0	0	0	0
Indiana	15	5	1	1	8
Iowa	4	1	0	0	3
Kansas	0	0	0	0	0
Kentucky	4	2	0	0	2
Louisiana	6	2	0	0	4
Maine	1	1	0	0	0
Maryland	13	4	3	1	5
Massachusetts	15	11	1	0	3
Michigan	30	10	6	1	13
Minnesota	0	0	0	0	0
Mississippi	4	2	0	0	2
Missouri	1	0	0	0	1
Montana	0	0	0	0	0
Nebraska	0	0	0	0	0
Nevada	1	1	0	0	0
New Hampshire	2	1	0	0	1
New Jersey	20	7	1	0	12
New Mexico	3	1	0	0	2
New York	56	27	2	2	25
North Carolina	18	5	0	0	13
North Dakota	1	0	0	0	1
Ohio	22	8	3	3	8
Oklahoma	1	1	0	0	0
Oregon	2	1	0	0	1
Pennsylvania	28	14	1	1	12
Rhode Island	1	0	0	0	1
South Carolina	8	5	0	0	3
South Dakota	0	0	0	0	0
Tennessee	9	7	0	0	2
Texas	0	0	0	0	0
Utah	2	0	0	0	2
Vermont	0	0	0	0	0
Virginia	16	5	4	1	6
Washington	8	3	0	0	5
West Virginia	0	0	0	0	0
Wisconsin	36	0	0	0	36
Wyoming	0	0	0	0	0
Virgin Islands	1	0	0	0	1
D.C.—all†	6	1	1	1	3

* Includes applications pending as of September 30, 1965.

† Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

TABLE 6

Status of de novo branch applications of national banks, by states, calendar 1965

	Received*	Approved	Rejected	Abandoned	Pending Dec. 31, 1965
United States	1,065	657	157	39	212
Alabama	16	13	1	1	1
Alaska	7	4	2	0	1
Arizona	16	8	6	0	2
Arkansas	13	9	2	0	2
California	175	89	55	2	29
Colorado	0	0	0	0	0
Connecticut	18	12	4	1	1
Delaware	0	0	0	0	0
District of Columbia	8	3	1	2	2
Florida	0	0	0	0	0
Georgia	8	8	0	0	0
Hawaii	2	1	0	0	1
Idaho	17	10	6	0	1
Illinois	0	0	0	0	0
Indiana	27	15	2	2	8
Iowa	13	10	0	0	3
Kansas	1	1	0	0	0
Kentucky	11	8	0	1	2
Louisiana	16	12	0	0	4
Maine	7	5	2	0	0
Maryland	31	20	3	3	5
Massachusetts	37	30	3	1	3
Michigan	73	48	9	3	13
Minnesota	0	0	0	0	0
Mississippi	17	12	2	1	2
Missouri	2	1	0	0	1
Montana	0	0	0	0	0
Nebraska	0	0	0	0	0
Nevada	3	3	0	0	0
New Hampshire	4	3	0	0	1
New Jersey	45	26	4	3	12
New Mexico	10	7	1	0	2
New York	123	78	13	7	25
North Carolina	32	17	0	2	13
North Dakota	1	0	0	0	1
Ohio	64	46	7	3	8
Oklahoma	3	3	0	0	0
Oregon	9	6	2	0	1
Pennsylvania	75	51	8	4	12
Rhode Island	2	1	0	0	1
South Carolina	25	20	1	1	3
South Dakota	4	4	0	0	0
Tennessee	31	29	0	0	2
Texas	0	0	0	0	0
Utah	4	2	0	0	2
Vermont	4	4	0	0	0
Virginia	56	30	18	2	6
Washington	18	8	5	0	5
West Virginia	0	0	0	0	0
Wisconsin	36	0	0	0	36
Wyoming	0	0	0	0	0
Virgin Islands	1	0	0	0	1
D.C.—all†	15	6	4	2	3

* Includes applications pending as of December 31, 1964.

† Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

TABLE 7

Branches of national banks: in operation September 30, 1965; opened, discontinued, or consolidated, October 1-December 31, 1965; and branches in operation December 31, 1965

	Branches in operation Sept. 30, 1965	Branches opened for business Oct. 1-Dec. 31, 1965	Existing branches discontinued or consolidated Oct. 1-Dec. 31, 1965	Branches in operation Dec. 31, 1965
United States	8,562	208*	14	8,756
Alabama	116	7	0	123
Alaska	38	2	0	40
Arizona	169	4	0	173
Arkansas	55	2	0	57
California	1,709†	33	0	1,742
Colorado	0	0	0	0
Connecticut	163	4	0	167
Delaware	4	0	0	4
District of Columbia	46	1	0	47
Florida	0	0	0	0
Georgia	114	6	0	120
Hawaii	39	1	0	40
Idaho	92	2	0	94
Illinois	0	0	0	0
Indiana	251	4	1	254
Iowa	26	2	0	28
Kansas	23	0	0	23
Kentucky	116	2	0	118
Louisiana	128	2	0	130
Maine	67	2	0	69
Maryland	181	5	0	186
Massachusetts	316	5	2	319
Michigan	391	6	0	397
Minnesota	6	0	0	6
Mississippi	50	14	0	64
Missouri	18	0	0	18
Montana	0	0	0	0
Nebraska	17	0	0	17
Nevada	32	0	0	32
New Hampshire	22	0	0	22
New Jersey	409	10	0	419
New Mexico	51	1	0	52
New York	943	19	8	954
North Carolina	259†	2	0	261
North Dakota	5	0	0	5
Ohio	504	11	0	515
Oklahoma	25	0	0	25
Oregon	204	5	0	209
Pennsylvania	763	20	0	783
Rhode Island	53	0	0	53
South Carolina	169	8	1	176
South Dakota	36	1	0	37
Tennessee	192	8	0	200
Texas	0	0	0	0
Utah	54	1	0	55
Vermont	29	2	0	31
Virginia	315	10	0	325
Washington	336	6	2	340
West Virginia	0	0	0	0
Wisconsin	24	0	0	24
Wyoming	0	0	0	0
Virgin Islands	2	0	0	2
D.C.—all‡	81	1	0	82

* Includes 175 de novo branches, 12 branches of newly converted banks and 21 branches acquired through merger.

† Revised.

‡ Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

SELECTED STATISTICAL DATA

TABLE 8

Branches of national banks: in operation December 31, 1964 opened, discontinued, or consolidated calendar 1965; and branches in operation December 31, 1965

	Branches in operation Dec. 31, 1964	Branches opened for business Jan. 1-Dec. 31, 1965	Existing branches discontinued or consolidated Jan. 1-Dec. 31, 1965	Branches in operation Dec. 31, 1965
United States	7,960*	841†	45	8,756
Alabama	106	17	0	123
Alaska	38	2	0	40
Arizona	166	7	0	173
Arkansas	47	10	0	57
California	1,648*	102	8	1,742
Colorado	0	0	0	0
Connecticut	152	15	0	167
Delaware	3	1	0	4
District of Columbia	45	2	0	47
Florida	0	0	0	0
Georgia	100	20	0	120
Hawaii	39	1	0	40
Idaho	90	4	0	94
Illinois	0	0	0	0
Indiana	244	11	1	254
Iowa	23	9	4	28
Kansas	24	0	1	23
Kentucky	110	9	1	118
Louisiana	126	4	0	130
Maine	62	7	0	69
Maryland	171	16	1	186
Massachusetts	303	21	5	319
Michigan	355	43	1	397
Minnesota	6	0	0	6
Mississippi	42	22	0	64
Missouri	14	4	0	18
Montana	0	0	0	0
Nebraska	16	1	0	17
Nevada	30	2	0	32
New Hampshire	17	5	0	22
New Jersey	390	30	1	419
New Mexico	46	7	1	52
New York	755	210‡	11	954
North Carolina	248	13	0	261
North Dakota	5	0	0	5
Ohio	465	50	0	515
Oklahoma	23	2	0	25
Oregon	199*	10	0	209
Pennsylvania	724	62	3	783
Rhode Island	52	1	0	53
South Carolina	161	19	4	176
South Dakota	34	3	0	37
Tennessee	179	21	0	200
Texas	0	0	0	0
Utah	53	2	0	55
Vermont	27	4	0	31
Virginia	274*	52	1	325
Washington	322*	20	2	340
West Virginia	0	0	0	0
Wisconsin	24	0	0	24
Wyoming	0	0	0	0
Virgin Islands	2	0	0	2
D.C.—all§	78	4	0	82

* Revised.

† Includes 587 de novo branches, 162 branches of newly converted banks and 92 branches acquired through merger.

‡ Includes 66 de novo branches, 136 branches of newly converted banks and 8 branches acquired through merger.

§ Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

TABLE 9

Branches of national banks opened for business, by community size and size of bank, October 1-December 31, 1965, and calendar 1965

Category	October 1-December 31, 1965	January 1-December 31, 1965
In cities with population:		
Less than 5,000	52	176
5,000 to 24,999	63	259
25,000 to 49,999	28	82
50,000 to 99,999	17	56
100,000 to 249,999	20	53
250,000 to 499,999	9	25
500,000 to 1,000,000	7	31
Over 1,000,000	12	159
TOTAL	208*	841†
By banks with total resources (in millions of dollars)		
less than $ 10.0	33	119
10.0 to 24.9	31	106
25.0 to 49.9	23	64
50.0 to 99.9	13	60
100.0 to 999.9	73	227
Over 1,000	35	265
TOTAL	208*	841†

* Includes 175 **de novo** branches, 12 branches of newly converted banks and 21 branches acquired through merger.

† Includes 587 **de novo** branches, 162 branches of newly converted banks and 92 branches acquired through merger.

TABLE 10

Mergers*, October 1-December 31, 1965, and calendar 1965

Applications carried over from:			
September 30, 1965	11	1964	15
Applications received:			
October 1-December 31, 1965	19	1965	77
Disposition of applications:			
October 1-December 31, 1965		1965	
Approved	22		81
Disapproved	0		1
Withdrawn	1		3
Applications pending:			
December 31, 1965	7		7
Transactions completed:			
October 1-December 31, 1965		1965	
Mergers	15		59
Consolidations	2		6
Purchase of assets	1		12
Total	18		77

The aggregate total of capital stock and capital accounts for the certificates issued are as follows:

	Charter or purchasing bank	Merg., consol. or selling bank	Combined
October 1-December 31, 1965			
Capital stock	$ 68,563,495	$ 7,527,280	$ 73,412,215
Capital accounts	239,613,701	18,124,597	252,554,619
1965			
Capital stock	$ 470,298,596	$24,227,204	$ 491,519,326
Capital accounts	1,492,914,898	81,999,991	1,552,439,088

* Includes mergers, consolidations and purchase and sale transactions, where the resulting bank is a national bank.

BOOK REVIEWS

Essays in Monetary Policy in Honor of Elmer Wood. By PICKNEY C. WALKER, ed. Columbia, Missouri: University of Missouri Press, 1965. Pp. 135. $3.75.

This volume of five essays, delivered originally as lectures at the University of Missouri by five widely experienced students and practitioners of monetary policy, exemplifies the informal method in economic reasoning. The lectures are readable and moderately stimulating. The substantive analyses presented, though leading to conclusions which in the main are not novel, generally are intuitively sensible and appealing, and at times offer significant insight. However, the arguments are rarely developed in a convincing manner. This failing illustrates why the informal approach is currently not in vogue among the younger generation of economists, which for good reason largely employs more formalistic structures, often involving mathematics.

Lack of appreciation for the significance of the "new" formalistic economics comes out strikingly in Karl Bopp's essay "Confessions of a Central Banker." Bopp, President of the Federal Reserve Bank of Philadelphia, argues that since theories offer conflicting answers, economic theory offers no clear guide to the central banker. But the concept of economic theory implied by this argument is misleading. Bopp fails to recognize that theory says no more than that a certain configuration of economic events would result if the world were characterized by certain technological, resource, and behavioral parameters. Contrary to Bopp's view, economic theories do not conflict. They simply focus on and point up the crucial nature of different assumed characteristics of the technical constraints and behavioral functions. Consequently, in order to use economic theory as a guide to action, one must first ferret out any logical inconsistencies in the structure of the theorizing and, second, identify and contrast the crucial assumptions of competing theories. Generally, both these tasks are appropriately the duty of the theorist. Yet unfortunately, theorists are often negligent in this respect. The final problem for the policymaker is to decide what are the technical and behavioral patterns which in fact characterize reality.

According to Bopp, the tragedy at this crucial stage is that even the opinions of experienced and wise men can and do differ over this question. Central banking is essentially the art of casual empiricism. But need this be the case? Bopp makes no mention of the tremendous strides that economics has made as an empirical science in recent years. Unfortunately, the Federal Reserve System has lagged behind this advance rather than being in its vanguard. This is not to imply that Bopp should have recognized econometrics as a panacea, or that most existing econometric results bearing on monetary policy should not be regarded as tentative, or that wisdom, experience, and common sense do not have an important role to play. However, central bankers like Bopp should realize that by accepting the validity of a scientific, empirical approach to monetary policy, they may become much more efficient utilizers of economic theory.

In this regard, Walter Morton's essay "The Changing Functions of Monetary Policy" gets high marks for his stressing that sound monetary policy requires a quantification of a "truly general theory," and that disagreements about policy usually reflect differences in quantitative assessments. Unfortunately, in presenting a miscellaneous collection of observations regarding stabilization policy, Professor Morton is not systematic enough to be able to explain to the reader exactly how conclusions are derived. Morton's views regarding the channels through which monetary policy takes effect and the relationship of aggregate demand to cost inflation have found wide acceptance, but are still provocative. However, many of his concepts, especially the key notion of "liquidity," are vaguely defined, and, for want of a consistently specified set of assumptions, the relationships and connections between the wide range of ideas he advances are never made clear.

Professor Seymour Harris' essay "Monetary and Fiscal Policy in the 1950's and

1960's" stresses the significant accomplishments of the Administration and Federal Reserve System in coordinating and mixing monetary and fiscal policy over the past five years to move the economy towards fuller utilization of its productive resources without deterioration in the balance of payments. The enlightened approach of the Kennedy-Johnson Administration in the use of fiscal policy to expand aggregate demand stands in sharp contrast to the views of the Eisenhower Administration. In addition, Harris argues, but provides no convincing evidence, that the Kennedy-Johnson Administration's guidelines for wage policy and use of moral suasion have been effective anti-inflationary weapons. On the contrary, however, it would seem plausible to suggest that the apparent absence of wage-push inflation in recent years has resulted from high levels of unemployment, and also, that in dealing with administered price increases the government has been effective only because of its own significant market power—for example, as a buyer of steel and as a potential seller of aluminum.

Charls Walker's essay "Fact and Fiction in Central Banking" refreshingly stresses that the execution and interpretation of monetary policy can only be understood within the context of political realities. Walker, Executive Vice President of the American Bankers Association, makes three interesting observations: First, although monetary policy is usually regarded as a more effective weapon against inflation than against recession, the easy-money bias of the political arena makes the authorities more enthusiastic about using monetary policy against recession than against inflation. Second, the wide fluctuations in interest rates that would probably accompany a constant rate rule of monetary expansion are unlikely to be politically tolerable. Finally, the post-accord bills-only policy was basically a technique to keep policy directives simple and unambiguous, and thereby to maintain the Federal Reserve Open Market Committee's close control over monetary policy, which it felt itself in danger of losing to the New York Federal Reserve Bank.

Such useful political savvy is missing from Lester Chandler's essay "International Central Banking." Professor Chandler proposes the establishment of a supranational central bank with discretionary power to create and regulate international reserves. These reserves would constitute claims on the bank which would be generally accepted in international payments. Chandler alleges that the present system is not designed to provide a level of international liquidity which would avoid generalized inflationary or deflationary pressures. Chandler's optimism regarding the realistic possibilities for adoption of his proposal are certainly unwarranted. To the contrary, surplus countries cannot be expected to surrender to a supranational authority more than a minimal amount of discretion over the extent to which they should finance other countries' deficits.

Moreover, is such a scheme necessary to achieve an appropriate global total of liquidity? Chandler makes light of the system of bilateral currency swap arrangements which has developed in recent years with the U. S. at the center. He argues that such diffuse decision-making is unlikely to yield appropriate results. Perhaps some more permanent and multilateral swap arrangements, including a centralized reserve currency to avoid confidence problems, would be technically more efficient. However, Chandler overlooks the fact that existing swap arrangements have demonstrated that more reserves can readily be created when desired by two countries. In fact, supranational authority only becomes necessary to force countries which have a surfeit of reserves to be a party to reserve creation, that is, to be more generous in their financing of other countries' deficits. Chandler bemoans the fact that in recent years U. S. monetary policy has been constrained by the balance of payments deficit. But surely what is needed is reform of the existing arrangements for correcting deficits. In this context, schemes for creation of liquidity such as Chandler's are misleading and irrelevant.

HERSCHEL I. GROSSMAN
Brown University

Government Securities Market. By IRA O. SCOTT, JR. New York: McGraw-Hill Book Co., 1965. Pp. xiii + 239. $12.50.

To my knowledge, Ira Scott's "Govern-

ment Securities Market" is the most comprehensive text written on the subject of government bonds and fills a much needed gap in this important area of financial market literature.

The early part of this work presents a basic analysis of the U.S. government debt and investors therein, and could serve as an ideal training aid for a young man interested in the functioning of this market. The first two chapters contain tables indicating the composition of the Treasury debt, ownership statistics, yield curves, and facsimiles of forms used in bill-bidding. Established procedures of Treasury security offerings and an analysis of computing interest are also included. Some variety is introduced into this basically descriptive area by the presentation of the institutional changes that have taken place in recent years in ownership of Treasury securities. Various institutional investment portfolios, which are helpful in drawing general conclusions in regard to investment practices of different types of accounts, are indicated in the tables in this preliminary section.

Subsequent chapters focus on dealer positions in theory and practice. A chapter concerning the actual operations of a dealer organization is particularly authentic. The author leads us through the minute-by-minute activity of the trading day with one of the oldest dealers in the business, (unfortunately no longer in existence). The theoretical discussion of the determination of dealer positions which follows should be helpful to those with a more advanced understanding of the market.

In the concluding chapter, Mr. Scott fires a few provocative shots at important public policy issues. On the question whether FOMC operations should be restricted to "bills-only," he states that the policy was originated primarily "to promote the making of better markets by the Government securities dealers." He reasons that "it is desirable to have a smoothly functioning market and bills-only contributes to an improved bond market through a reduction in uncertainty. . . . Greater uncertainty . . . results in higher asked and lower bid operations—a widening of the dealer's spread, a lessening of the dealer's willingness to do business, and a poorer market performance . . . Consequently, bills-only contributes to narrower spreads and to better dealer performance in the long-term sector." While neither accepting nor rejecting the thesis that public policy demands a greater degree of control over the interest rate structure than is inherent in the bills-only policy, Mr. Scott warns that there may be certain costs in terms of market performance that result from central bank operations in the long-term sector. He pinpoints the error of many economic dilettantes who fail to recognize that it is a "vital oversimplification to fail to distinguish between debt-management operations by the Treasury and open-market operations by the central bank." In recognition of the Treasury's ability to "flatten the yield curve" through debt-management operations, Scott concludes "that the twin objectives of meeting recovery and balance of payments needs, on the one hand, and desirable market performance on the other can be achieved simultaneously" through aggressive debt management combined with a return to bills-only on the part of the FOMC. Market operations in the last few months indicate that perhaps the authorities may be coming around to acceptance of at least the second part of Mr. Scott's proposal.

Mr. Scott also raises questions about the financing of dealer positions, the borrowing of securities, and the regulation of margin requirements. He finds that the inadequacy of the dealer-loan market has promoted the cultivation of repurchase financing on the part of the dealers. This is less than satisfactory because of the time and expense involved in obtaining funds. He therefore recommends an extension of the Federal Reserve discount window facilities to nonbank dealers. On the problem of borrowed securities, he finds that the "quality of market performance on the supply side is affected adversely by the difficulty which a dealer may experience in locating securities he has sold short." His answer to this problem is the lending of securities by the Federal Open Market Committee and Treasury-managed Trust Funds. As far as margin requirements are concerned, the author suggests that the regulations set by the New York Stock Exchange and the Comptroller of the Currency should be applied to other lenders, including nonfinancial corporations, though

he is vague about enforcement in this area. He recommends that dealers in government securities should be excluded from these regulations since the FOMC can be relied upon to keep an eye on their financial adequacy.

On the subject of debt management, Mr. Scott recommends a number of sound improvements. What is noteworthy about these suggestions is not so much their originality, for in fact a number of competent observers have proposed similar reforms, but the fact that numerous Treasury debt-management teams have been unable to implement them.

Mr. Scott calls for a reduction in the number of issues outstanding as an aid to the trading market. He suggests the scheduling of regular offerings of long-term securities in the interest of (1) encouraging systematic allocation of funds by institutional investors, (2) reducing uncertainty and, consequently, broadening the secondary market, (3) allowing other borrowers to plan trips to market without conflicting with Treasury operations. The author approves existing advance refunding techniques as a stopgap method of coping with an excessive shortening of the debt, but believes that "once a better balance in the distribution of debt has been achieved, this technique should be used sparingly . . . The use . . . has an adverse effect upon the dealer market for the simple reason that it tends to bypass that market."

Mr. Scott sees no intrinsic conflict between suggestions that debt management may properly be used as a method of affecting the yield curve and proposals that longer term offerings be scheduled on a regular basis. He contends that the size of the offerings could be altered sufficiently to create appropriate pressures on the yield curve. The author concludes by rejecting the Dutch auction technique for Treasury securities that has been proposed in some quarters, since it would fail to reward underwriting bids below the "to be sure" level and would thus dampen dealer incentive for risk-taking and reduce the level of market performance.

On the whole, *Government Securities Market* will prove of value to all those concerned with this specialized area of finance. Buyers and sellers, borrowers and lenders, young and old at all levels of experience should find something of particular interest in this text.

DONALD B. RIEFLER

Morgan Guaranty Trust Company
New York

The Public-Private Character of United States Central Banking. By J. Z. ROWE. New Brunswick, N. J.: Rutgers University Press, 1965. Pp. 210. $8.00.

The revival of academic interest in monetary policy, which has been described and justified at considerable length elsewhere, coupled with a number of political clashes between the Federal Reserve System and the Kennedy-Johnson executive branch has produced a number of books and monographs in this general area. There can be little question that this interest in monetary affairs has received impetus from suggested reforms of the Federal Reserve System, which have ranged from the rather mild procedural modifications proposed by the Commission on Money and Credit to the neopopulistic wrath of Rep. Wright Patman.

As has been masterfully argued by James Schlesinger,[1] the critical evaluation of monetary policy has produced strange bedfellows. Some libertarian commentators have castigated the Federal Reserve as an agency that meddles with the market system with discriminatory and/or inefficient results; some not-so-libertarian critics have criticized its effectiveness with one breath while denouncing its premature restrictionist tendencies in the next.

It is in this context that it is interesting to evaluate what might be considered "insider" responses to criticism of the monetary authorities. For the most part, such response has been confined in the nonacademic sparring arena of the Congressional hearings, but the staff of the System has produced an occasional serious rebuttal.

Evaluations of Federal Reserve policy can take a number of forms: philosophical, historical, analytical-theoretical, and structural. The works of many commentators combine

[1] See Schlesinger, "Monetary Policy and Its Critics," *Journal of Political Economy*, December, 1960.

all of these approaches with varying success. Certainly it need not follow that an historical judgment regarding the Federal Reserve System's performance during the 1930's results in advocacy of current institutional reform.

The work under consideration here is interesting on two counts. J. Z. Rowe is Director of Research at the Federal Reserve Bank of Dallas, which may or may not indicate his ability to speak for the System. The second point, naturally, is the theme of the book itself. This monograph, part of the Rutgers Banking Series, investigates the question of the "public-private" character of central banking, with a rather detailed look at the legislative history of banking control in the United States. In fact, the first six chapters, which constitute half of the book, are devoted to a competent but hardly newsworthy treatment of United States central banking history. Much of this historical treatment seems to be devoted to establishing precedents, or even what one might call "patriarchal directives," for the present admixture of public and private elements. Witness Alexander Hamilton:

> . . . it appears to be an essential ingredient in its structure that it shall be under a private, not a public direction—under the guidance of individual interest, not of public policy, which would really be liable to being too much influenced by public necessity.

The second half of the book is split into two parts: Chapter VII deals with trends of the present century in the ownership and management of foreign central banks, and Chapter VIII is entitled, "Some Recurring Issues Concerning the Public-Private Nature of the Federal Reserve System." In the former chapter, Dr. Rowe concludes that the current pattern in central banking is "quite clear"—in only 12 of some 72 foreign central banks nongovernmental interests held over 50 percent of stock as of 1959. Once again, although his chapter on foreign central banking is competently done, it hardly advances our knowledge in this field.[2] Although the author begins this chapter with the caveat that "the institutional form given to a central bank in one country, however, may be quite inappropriate in another," he certainly does not present any reasonable argument in regard to the U.S. being a special case.

Much of the book, I believe, is a prelude to Chapter VIII—the discussion of proposed modifications in the legal and institutional structure of the Federal Reserve System. In this respect, Dr. Rowe considers three main questions: the private elements in the System; the allocation of earnings; and the possible modification of its credit policy responsibilities. Unfortunately, the presentation is superficial. Surely most readers would prefer the Federal Reserve System to present a stronger rebuttal.

In my opinion, the standard justification for retaining private ownership of the System—that is, that stockholding by member commercial banks somehow breeds better understanding with the District office of the System—seems quite foolish. The "guaranteed" 6 percent dividend on System stock, moreover, is hardly a strong inducement in attracting membership. On the other hand, the costs of continuing the present arrangement seem equally trivial; if this arrangement is bad for "appearance's" sake, it has not attracted a great deal of public outcry. Furthermore, the 6 percent subsidy in dividend form is probably not a very desirable *quid pro quo* for the anachronistically high reserve requirements on commercial bank deposit liabilities.

The second major issue—the prodigality of the Federal Reserve System—is also left virtually unresolved. It is interesting to note that the author avoids some of the *truly* embarrasing questions, such as the exact salary of the President of the New York Federal Reserve Bank and the item of $462.59 for an employees' bowling banquet.[1] Although it goes against my conservative in-

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[1] See *The Federal Reserve System After Fifty Years*, Staff Report on Hearings Before the Sub-Cong., 1st Sess., 1963, as well as Bank for International Settlements, *Eight European Central Banks*, London: Allen & Unwin, Ltd., 1963.

[2] For more specific detail, see *Comparative Features of Central Banks in Selected Foreign Countries*, Joint Economic Committee, 88th

clinations, one has to admit that some financial irregularities are generally an inevitable part of all enterprises, and it is likely that the Federal Reserve System has as few as any.

Thirdly, we come to the most important and the most interesting question raised, but briefly, by Dr. Rowe. The ubiquitous criticism of Federal Reserve policy targets, voiced by Friedman, Brunner-Meltzer, Meigs, Dewald, Bronfenbrenner, and Modigliani, to name but a few, is beginning to result in public action. The Commission on Money and Credit agreed in the main with this criticism; its first recommendation regarding reform of the Federal Reserve System urged that the average rate of growth in the money supply be consistent with the maintenance of high employment, stable prices, and adequate economic growth. Rep. Wright Patman has come much closer; a few of the many bills introduced by him in the last few sessions of Congress require that the President establish guidelines for monetary policy, including a specified rate of growth in the money stock, which, however, is to be selected by him. According to the most often quoted passage from Keynes, men of affairs are guided by men of ideas (with some cultural lag), so that it seems to be only a matter of time before the polemicists of the "rules, si! authorities, no!" inclination get their way.

Dr. Rowe cannot be blamed for failing to face this challenge, since it is not, properly speaking, part of his chosen theme of the public-private character of the System. Other members of the System staff have been derelict in their duty to their employer, however, There have been few serious responses to the proposal for a constant 3 to 4 percent annual increase in the money stock.

Interesting questions concerning the procyclical character of the money supply (as well as the Brunner-Meltzer "base") and the relevance of money substitutes have not been answered satisfactorily. The impact of monetary policy on interest rates is not really known and more precise testing of the availability hypothesis is needed. Last, but certainly not least, the link to the "real side" must be established. Surely, spending on consumer durables must be linked to consumer credit, residential construction to mortgage lending, and inventory accumulation to short-term bank credit, but to what extent? Having done some preliminary work of this type with flow-of-funds data (in which my equations led to a minimizing of the coefficient of determination and a maximizing of the Durbin-Watson measure of autocorrelation), it is my opinion that these "obvious" relationships are hardly stable.

I hope that the author of the book will forgive this digression. In short, Dr. Rowe has written a thought-provoking book on a timely topic; I trust that my disappointment at not getting answers to some questions is not too overriding.

GEORGE J. VIKSNINS
Georgetown University

committee on Domestic Finance, Committee on Banking and Currency, House of Representatives, 88th Cong., 2nd Sess., August 25, 1964, p. 86.

Commercial Banking and Regional Development in the United States, 1950-1960. By GEORGE MACESICH. Tallahassee, Florida: Florida State University, 1965. Pp. xvii + 160.

Professor Macesich's book contributes little to anyone's basic knowledge of the role of commercial banks in regional economic development. Instead, he presents the reader with an indigestible potpourri of unrelated data, questionable analysis and unwarranted conclusions. The title of the book itself is misleading. While the author does concern himself with commercial banks, economic development is discussed primarily in the context of the Southern states and the discussion ranges over a much longer time span than 1950-60. The book may most accurately be described as a collection of miscellaneous essays in banking. Its 14 chapters are almost entirely separate entities, held together only by the common thread that each is concerned with some aspect of commercial banking.

In the early chapters, the author resurrects the old bogyman thesis of banking, arguing that a goodly number of the South's long-lasting economic and social ills can be attributed to commercial banking, in particu-

lar to "defunct monetary ideas originating elsewhere than in the South." It is claimed that the real bills philosophy, while possibly appropriate to Northern conditions, was totally inappropriate for the South where the basic need was for longer term credit. Nevertheless, Southern banks performed commendably under these conditions until the Civil War when "the Union victory . . . returned the region to colonial monetary status from which it was not to recover until the 20th century. The National Bank Act of 1863 and the annual 10 percent tax on the issues of state bank notes were in no small measure responsible for subsequent Southern difficulties." (p. 19). The first reaffirmed the real bills doctrine while the latter deprived the South of currency. The currency shortage was particularly disastrous as Southerners "attached such importance to having a currency, even a depreciating one as the Confederate dollar, that they were willing to pay the great amount of resources for it. So great was the price in fact that it enabled the Confederate Government to finance almost 70 per cent of the war effort by currency issues." (p. 20) The South's appetite for currency seems to have been matched only by Europe's postwar craving for cigarettes!

According to the author, the Federal Reserve System, while well intentioned, also did not understand the South and prolonged the period of economic stagnation. It took World War II to overcome the depressing effects of the banking system through a build-up of defense installations and industries "attracted in part by a favorable climate for military operations" (sic). Indeed, commercial banking was responsible not only for economic stagnation, but also for "such social peculiarities as 'racial discrimination'."

Although, Macesich argues, the Federal Reserve itself may not have contributed greatly to the economic development of the South, member banks appeared to have been a major contributor.

> The importance of the Federal Reserve System to Southern banking and thus to the region's development is apparent when the distribution of commercial bank assets and liabilities amongst the several classes of banks is considered. Nonmember banks tend to hold a higher proportion of their assets in government securities as a liquidity hedge. . . . Fortunately for the South, however, member banks hold the bulk of commercial bank assets and liabilities. (p. 65-66)

Ergo, to increase loans and accelerate development one need only to require universal Federal Reserve membership!

Chapters 7 through 13 are each devoted to testing a particular hypothesis linking banking and regional development. The statistical testing procedures are uniformly nonrigorous and the conclusions are as often as not unsubstantiated. Chapter 7 examines the "Schultz" hypothesis that product and factor markets operate more efficiently in the center of a "matrix of economic development" than on the periphery. Macesich finds that gross earnings on loans do not differ significantly between member banks in the center and on the periphery and rejects the hypothesis. Unfortunately, inadequate attention to loan mix differences among banks in the two areas (a two-way breakdown by size at $10 million is hardly sufficient), dubious representation of member banks on the periphery (only one-third of all banks in the Southern states are member banks and most of these may be expected to be in urban areas), and the use of 1959 when interest rates at city banks may reasonably have been expected to have risen to the inflexible high levels of country banks, cast doubts on the validity of the conclusion. Certainly, generalizations such as, "a closely knit banking structure such as that of the member banks of the Federal Reserve System provides a nationwide market for capital funds rather than many local money markets," (p. 91) are hardly warranted by the evidence.

A number of the author's questionable conclusions appear to result from naive use of statistical techniques. In chapter 10, for example, Macesich observes a high positive correlation between net profits of banks and dividends paid, and vice versa. From this he argues "that perhaps too much has been made by some people of the willingness on the part of sophisticated investors to take their returns in something other than cash. It is not likely that such investors will continually prefer less profitable banks," (p. 121). Certainly no more likely than the

sophisticated investor preferring Montgomery Ward to IBM two decades ago!

The lack of statistical sophistication is again evident in chapter 12. This chapter tests a number of statements relating bank earnings and economic development. In all, ten simple correlations are computed and all are found to have signs consistent with those hypothesized. The fact that not one of these correlations is significant only causes the author to caution that the relationhips may not be very strong.

Other hypotheses tested are: that Southern banks are more liquidity-conscious (rejected); earnings on bank loans differ among Federal Reserve Districts (accepted); banks are more profitable in less developed areas (accepted); bank asset portfolio mix is related to economic development in the area (accepted); and, bank expenses do not vary with size of bank (accepted, although this hypothesis is a misinterpretation of Alhadeff whose book is footnoted). Somehow, it is difficult to see how all this has advanced "the hypothesis . . . that monetary and banking forces have helped to create in the relatively underdeveloped Federal Reserve Districts an atmosphere favorable to economic stagnation."

The book is not all bad; it is short.

GEORGE G. KAUFMAN

Federal Reserve Bank of Chicago

The German Inflation, 1918-1923. By KARSTEN LAURSEN AND JØRGEN PEDERSEN. Amsterdam: North-Holland Publishing Co., 1964. Pp. 138. $4.20.

In this book, Mssrs. Laursen and Pedersen attempt to discredit the generally accepted explanation of a government deficit and increased money circulation as the forces initiating the German inflation of 1918 to 1923. For me, their efforts are unsuccessful.

The authors reason that, until 1923, the inflation in Germany was the result of a lack of economic policy on the part of a government unwilling to force unemployment and poverty upon the German people. They believe that the inevitable result of a policy of credit and fiscal restrictions on demand would have led to economic disaster. They show that employment levels in Germany were favorable when compared with those nations that chose to follow an anti-inflationary policy. Total production in Germany remained high during the period and the distribution of income was more equitable than that of other countries. Workers spent their funds on consumption as soon as they were received, but Laursen and Pedersen believe that they would have been spent entirely in any case, thereby implying a marginal propensity to consume, equal to 1, for low-income recipients. Entrepreneurs, instead of engaging in conspicuous consumption, chose to put the benefits of inflation to productive investment in plant and equipment. The only alternative to the policy of drift in inflation that the authors suggest is feasible is to combine wage controls with an effective credit and fiscal policy. The latter alone, they believe, will lead to economic ruin. They nevertheless hold that wage controls were not possible for Germany in the period under consideration, because of a strong labor union movement and wages that were increasingly tied to the cost of living.

Laursen and Pedersen obviously cannot deny a role to excessive money issue and a government deficit. What they object to is the sequence of events as interpreted by such observers as Bresciani-Turroni who hold the orthodox view of hyperinflation. The authors instead lean toward the views of John Williams and James Angell who suggest that a deficit in the balance of payments (attributable in part to reparations) led to a rise in the dollar rate of exchange which in turn induced rising prices, a budget deficit, and an increased money supply.

The text follows standard scientific form. The first chapter states the purpose of the study. Chapters 2 and 3 are devoted to a general exposition of the course of inflation in Germany and the competing theories concerning its causation. The authors reject the orthodox quantity theory exposition of the inflation, albeit the version of that theory used is the crude quantity theory, in fact so crude that only paper currency is discussed in connection with money supply variations. Chapter 4 sets up a model to explain the inflation. Chapter 5 examines the behavior of each of the variables; presumedly this constitutes a test of their theory.

The remaining chapters are then devoted to examining in more detail the interrelationships between the inflation, total production, the structure of production, trade and the distribution of product.

Yet the procedure actually used is unscientific. While a model is set up, it is not tested in any satisfactory scientific manner. What we encounter, instead, is a historical discussion of the behavior of the variables in the model. While this might be acceptable where data is inadequate, such is not the case for the German inflation of 1918-23.

The model used by the authors employs various behavioral relationships. Equations are developed in general form only, so that no specific equations, no parameters, no levels of confidence, no standard errors, etc. are indicated. In brief, the main ingredients of the model used are: (1) exports and imports are a function of costs and income at home and abroad, the main determinants of costs and income being wages, employment, and productivity; (2) employment is determined by credit conditions and the government budget; (3) productivity in Germany after 1919 is a function of the ratio of imports to import prices; (4) wages are a function of the price level and employment from 1919 to 1921, and a function of the exchange rate and employment in 1922 and 1923; (5) the price level in Germany is a function of German wages, employment, productivity and foreign prices; (6) the demand for German marks in the foreign exchange market is a function of the ratio of the prevailing exchange rate to the expected future exchange rate; and (7) wages in Germany relative to those abroad is a function of the ratios of productivity and employment in Germany to those abroad, and the ratio of unilateral reparations payments to the foreign demand for German marks.

As previously noted, the outcome of a casual examination of the data pertaining to this model reveals a stress on the role of reparations and the lack of wage controls as primary forces behind the inflation. According to the authors, these factors, coupled with the lack of demand restraints, induced the inflation, budget deficits, and note excess.

Not only do the authors avoid a formal test of their model, but they also avoid testing alternative hypotheses. In addition, their familiarity with the literature in English on the subject seems limited to that of the 1920's, and even here they make no reference to Frank Graham's classic work, *Exchange, Prices and Production in Hyperinflation: Germany, 1920-1923.*[1] A contemporary alternative hypothesis, with which the authors are not familiar, is that in hyperinflation the demand for real cash balances is a function of the expected rise in prices. This hypothesis was tested for a series of hyperinflations, one of which was the German experience, by Phillip Cagan in his "The Monetary Dynamics of Hyperinflation."[2] The results supported the hypothesis for the inflations studied.

Laursen and Pedersen draw some general conclusions concerning inflation. These are that: (1) inflation does not have as devastating an effect upon production as previously thought; (2) inflation can be controlled only by combining wage controls with demand restraints; and (3) inflation should be accepted if wage controls are not feasible, because employment decreases are still worse than the consequences of inflation. These are dangerous conclusions because, if accepted by governmental decision-making authorities, they can lead to unrestrained credit expansion. I believe that most American economists, whether arguing from a Keynesian or a contemporary quantity framework, would view with alarm the consequences of such expansionism. The Western economic world of the 1960's does not resemble the post-World War I Europe recovering from war devastation.

JOHN J. KLEIN

Fordham University

Financial Accounting Theory. By HAROLD BIERMAN, JR. New York: The Macmillan Company, 1965. Pp. 402. $3.95.

The objective of this book is to present current accounting practice and contro-

[1] Princeton, N. J.: Princeton University Press, 1930.

[2] In M. Friedman, ed., *Studies in the Quantity Theory of Money,* Chicago: University of Chicago Press, 1956.

versies to business managers and prospective business managers to assist them in effectively using and appraising financial information. In so doing, the author plunges deeply into the present conventions affecting financial reports. Some knowledge of accounting is presumed, as well as familiarity with compound interest, fixed sums, and annuities. For the reader whose background is rusty a brief review is provided in an Appendix.

The text departs from conventional accounting books because it takes apart the fabric of accounting and looks at its threads, considering a variety of ways of observing and recording economic events.

Although the author states that financial information has three functions—to record financial transactions, to summarize and present financial information in reports, and to analyze these reports—he deals primarily with the last of these concerns. For this reason, the book should be useful to all people interested in financial reports, and not simply to accountants. The more sophisticated reader will find Mr. Bierman's ideas on how to improve financial reports of considerable interest.

Each of the 11 chapters presents an ample supply of questions and problems (many of which are based on the actual annual reports of various types of business) for which key answers are supplied. This unusual feature should permit the use of this book as a supplementary reading text for courses in managerial accounting, intermediate or advanced accounting, or auditing.

Throughout the book, the author challenges conservatism in accounting, stating that it "is not as strong a virtue as reasonableness." He believes, for example, that whereas market values are commonly considered to provide objective evidence for the write down of securities, they should also be recognized as sufficient evidence for a write up of marketable securities to market value, a concept that bank examiners might be reluctant to accept. Most of the author's new ideas are backed by suggested entries in the accounts.

All current depreciation methods are presented. The author is quick to point out that a great part of the "new" theory of depreciation developed in this text is intended as an aid for appraising current methods of depreciation accounting, and possibly for the adoption of better depreciation practices.

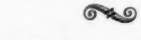
The author answers the question when income should be recognized with many new illustrations and ideas. His "Accretion Basis" for recognizing income for timber-owning companies is very completely presented. In terms of income recognition and related asset presentations, the author argues that published financial reports of timber-owning companies and oil companies are contenders for the title of "least useful reports for investment decisions." Both industries omit or misstate their prime tangible assets: the current value of the trees, or the value of the oil reserves.

The limitations of financial statements are effectively pointed out in the chapter on "Analysis of Financial Statements," including the possible necessity of adjusting the financial reports before computing ratios and percentages. Several new methods of analyzing financial statements are presented, some of which make use of the funds statement in the analysis of liquidity. Noting that the funds statement is increasingly becoming a part of the annual report of corporations, the author states that "the next step is to incorporate it systematically into the analysis of liquidity, rather than to restrict its function to the explanation of the causes of changes in working capital." To further this goal, the author presents several possible computations that may assist in this type of appraisal of financial liquidity.

To sum up, Bierman achieves his objective of presenting accounting controversies to obtain better financial reporting, and introduces a number of novel suggestions and approaches in so doing.

RICHARD R. TOWLE

Boston University



Money and Banking: An Introduction to Analysis and Policy. By JOHN G. RANLETT. New York: John Wiley and Sons, Inc., 1965. Pp. xiii + 515. $7.95.

This textbook is competent. Despite its rather flat style, it will be found teachable by most instructors and very readable by the majority of students.

Consistent with the author's intentions, this text makes only marginal references to

monetary and banking history, neglects the operating aspects of banking, but does cover much of neo-Keynesian macro-economic theory. Far from being an encyclopaedic volume, it expounds with remarkable thoroughness the basic concepts and relationships of commercial and central banking as well as monetary theory. This may well represent the book's principal merit, even though there are occasional overextended and repetitious statements. Frequent use of T-accounts is a conspicuous feature of the book which enhances the didactic value of Ranlett's exposition. Also useful are excellent graphs which, however, should have been labeled more completely.

In the opinion of this reviewer, the text has not been improved by omitting many contemporary as well as historical issues of American banking. To list a few, such important topics as bank organization—including branch banking—bank failures, flow-of-funds analysis, and credit instruments, are not discussed. Although three pages are devoted to the defunct "bills-only" doctrine, the 1961 Report on Money and Credit is hardly mentioned. (The only reference to this historic document is made in one paragraph dealing with national economic goals.) There are at least two noteworthy implications of Ranlett's approach: The student will not read (and perhaps not learn) about the omitted topics in the proper setting, and banking becomes something less than an important industry. In view of the author's emphasis on the great value of economic analysis in the interpretation of complex economic systems, the omission of specific historical facts and perspective is self-defeating.

It is characteristic of this volume that only half of it describes the standard topics of money and banking textbooks, such as the monetary system, commercial banking, and the Federal Reserve System. In fact, coverage of nonbank financial institutions has also been incorporated in this part of the book. On the other hand, the theory of aggregate economic activity, including a chapter on interest theory, extends to as many as 5 chapters without breaking any new ground. Some readers may share the view that in the structure of this text, the chapter on interest theory begins abruptly and after considerable delay, since it follows the introduction of monetary theory by about 50 pages. Then, too, in a book which claims to be primarily theoretical, the explicit contributions of at least a few contemporary monetary economists should have been outlined.

The three chapters on international money and finance overlap with textbooks in foreign trade. Ranlett's account cannot be consulted on matters pertaining to international banking—commercial or central—although it summarizes the issues involved in the contemporary crisis of the international financial mechanism.

KAREL HOLBIK

Boston University